THE ORCHID ALBUM.

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THE

ORCHID ALBUM

CONTAINING

COLOURED FIGURES AND DESCRIPTIONS

OF

NEW, RARE, AND BEAUTIFUL

ORCHIDACEOUS PLANTS.

CONDUCTED BY

ROBERT WARNER, F.L.S., F.R.H.S.

(Author of Select Orchidaceous Plants),

AND

BENJAMIN SAMUEL WILLIAMS, F.L.S., F.R.H.S.

(Author of the Orchid-Grower's Manual, &c.).

THE COLOURED FIGURES BY JOHN NUGENT FITCH, F.L.S.

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DEDICATED

BY SPECIAL PERMISSION

TO

H.R.H. The Princess of Wales,

BY

HER ROYAL HIGHNESS'

Very obedient and humble Servants,

ROBERT WARNER,

BENJAMIN S. WILLIAMS.

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J. Nugent Fitch del

HOULLETIA BROCKLEHURSTIANA.

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HOULLETIA BROCKLEHURSTIANA.

[Plate 337.]

Native of Brazil.

Sub-terrestrial. *Pseudobulbs* conical, furrowed, about three inches high, bearing a single petiolate leaf, which is broadly-lanceolate, much plaited, upwards of a foot long, and light green. *Scape* produced from the side of the ovate-pseudobulb, longer than the leaf, erect, bearing a raceme of from eight to twelve nodding flowers, the flowers being highly coloured, delicately fragrant, and from three to four inches across. *Sepals* and *petals* nearly equal, oblong-obtuse and spreading, ground colour orange-brown, with dark purplish brown spots; *lip* shorter than the perianth, yellow spotted with dark brown, pointed at the middle, purple towards the apex, and bearing two short horns which point towards the column. *Column* stout, falcate.

Houlletia Brocklehurstiana, *Lindley, Sertum Orchidaceum*, t. 43; *Botanical Magazine*, t. 4072; *Pescatorea*, t. 36; *Paxton's Magazine of Botany*, ix., t. 49; *Gartenflora*, t. 229; *Revue Horticole*, p. 492; *Williams, Orchid-Grower's Manual*, 6 ed., p. 342.

Maxillaria Brocklehurstiana, *Lindley, Botanical Register*, 1841, misc. 27.

Maxillaria Stapeliæflora, *Brongniart, Hortic. inio.*

It affords us much pleasure in being able to bring before our subscribers the portrait of this very beautiful and curious old Orchid, which appears to have been introduced to cultivation about the year 1839. It is this species upon which the genus was established by Brongniart, and flowered first in this country with the late Thomas Brocklehurst, Esq., of Macclesfield, in the year 1841, and in whose honour it was named by Dr. Lindley. It flowered again in the Kew collection in 1843, but, notwithstanding its beauty, it has never become a popular Orchid in this country. The genus is nearly allied to *Stanhopea*, but differs principally in its lip, which is jointed in the middle, bearing two horn-like processes on its lower half, which are directed towards the column. Various other species are now in cultivation, for the names and descriptions of which we must refer our readers to the *Orchid-Grower's Manual*, page 342, where descriptions of all the most desirable kinds are to be found. Our drawing was taken from a plant in the possession of H. Grose Smith, Esq., of the Priory, St. Helen's, Ryde, Isle of Wight, in whose well-grown collection it flowered under the care of Mr. Earle, the gardener.

Houlletia Brocklehurstiana is a handsome and showy species, growing to upwards of two feet in height, and has a conical furrowed pseudobulb, which bears a single broadly lanceolate light green leaf. The flower spike proceeds from the

base of the bulb, and is erect, some twelve inches in height, bearing numerous very fragrant nodding flowers, which are nearly four inches in diameter. Sepals and petals rich sienna-brown, spotted with dark purplish brown; lip yellow, profusely spotted with the same colour as the other portions of the flower. They are deliciously sweet, and continue in beauty about a fortnight. This species is of free growth, and thrives well in an intermediate or Cattleya-house, but it grows equally well with us in the Odontoglossum-house, where it flowers abundantly. The bulbs of this plant should be well matured; this is of special importance if good results are expected. Let the plant have its growing season at the proper time, and encourage it as much as possible to throw up new growths, which should appear about the time of flowering. During active growth it requires a moderate supply of water to its roots, but when the growth is completed, withhold water and allow the plant to have a thorough rest, always being careful to avoid distressing it. When the flower spikes and young growths begin to show, gradually supply water regularly in order to assist the blooms, and enable it to make good growths for another season.

This plant requires shading from the hot sun, but this must be done with a very thin material, as it likes good exposure to the light. We find rough fibrous peat and living sphagnum moss a fine compost for it, adding some nodules of charcoal, and draining well. The roots enjoy a great deal of freedom, therefore elevate the plant well above the rim of the pot to encourage them to ramble.

CATTLEYA GIGAS.—We have received from W. J. Thomson, Esq., Ghyllbank, St. Helen's, a fine spike of this gorgeous Cattleya, containing six flowers, the individual blooms measuring eight inches across; it is indeed a wonderful spike. The sepals and petals are of a rich rose colour, whilst the lip is of an intense magenta-crimson margined with pale rose, and the throat orange veined with dull purple. It is a great pity that this is not a freer-flowering species. We find a sunny situation, with plenty of heat and moisture, the most successful position in which to cultivate it.—B. S. W.

J. Nugent Fitch del

VANDA LAMELLATA BOXALLII.

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VANDA LAMELLATA BOXALLI.

[Plate 338.]

Native of the Philippine Islands.

Epiphytal. *Stem* erect, slender, furnished with numerous closely set, distichous, narrowly ligulate, channelled, and much recurved leaves, which are obliquely and acutely bidentate at the apex, coriaceous in texture, and light green. *Spike* axillary, erect, much longer than in the typical plant, raceme many-flowered. Upper *sepals* and *petals* reflexed and creamy white, the former oblanceolate, the lateral sepals the largest, sub-falcate, superior half creamy white, inferior portion reddish brown, tinged with purple; *petals* oblong cuneate; *lip* sub-panduriform, with a retuse apex, anterior portion rich rosy-magenta, the disc ornamented with six streaks of purple, which extend backwards to the mouth of the spur. *Spur* short, cylindrical, hirsute internally.

Vanda lamellata Boxalli, *Reichenbach fil.*, *Gardeners' Chronicle*, n.s., xiii., 1880, p. 743; *Id.*, xv., 1881, p. 87, fig. 18; *Garden*, xix., p. 574, t. 287; *Williams, Orchid-Grower's Manual*, 6 ed., p. 604, with fig.

Vandas are all natives of tropical Asia, and are amongst the largest-growing Orchids of the old world, although some species are of medium growth only. Some beautiful additions to this genus have been made during the past few years, amongst them being the variety of *V. lamellata*, which we now lay before our readers. Professor Reichenbach has named it *Boxalli*, in honour of its discoverer, one of Messrs. Low & Co.'s most successful collectors, who sent it home in large masses, when it soon proved itself to be a most desirable acquisition to this ornamental section of distichous-leaved Orchids. This plant is a dwarf species, and never attains to any particular height, but it is a free grower and an abundant bloomer, whilst the flowers last in full perfection for a very long time; some plants continued in bloom with us during the past winter for upwards of two months. Although it cannot compete with such kinds as *V. suavis*, *V. tricolor*, and *V. Sanderiana* in size, yet when a good mass is obtained with many spikes of bloom, it produces a really charming effect, a statement which a reference to our artist's drawing will amply verify.

For the opportunity of figuring this beautiful Vanda, we are indebted to the kindness of G. W. Law-Schofield, Esq., New-Hall-Hey, Rawtenstall, near Manchester, in whose well-known collection it blooms very freely.

Vanda lamellata Boxalli is a dwarf evergreen variety; in growth, like the species, it has narrow leaves, some eight inches in length, of a pale green hue. The erect spikes proceed from the axils of the leaves, on both sides of the stem,

bearing from ten to twenty or even more flowers, which are very handsomely variegated with white, rich brown and magenta. The upper sepal and the two petals are directed backwards, the sepal being oblong-lanceolate, of a creamy white, the lower ones obovate with the inner side cut away; this part is reddish brown, tinged with purple. The petals are white, and the lip is rich rosy-purple, with streaks running back to the mouth of the tube. The creamy white of the outer portion of the lower sepals, contrasting with the reddish brown of the inner half, has a peculiar and charming effect. The flowers of this variety are produced during the months of November and December, and they remain many weeks in full beauty.

This small-growing Vanda, like several others which we have already figured in the *Orchid Album*, requires more care than some of the larger-growing kinds, which we have enumerated above; that is to say, it thrives best when grown in baskets or in pots, suspended from the roof near the glass, or if not suspended the plants should be arranged upon the side tables, where they may obtain an abundance of light. A thin shading in order to break off the sun's rays will be, however, necessary for the well-being of these plants, but the shading should never be down when the sun is not shining; attention to these few remarks will tend to produce strong and robust growth, and a profusion of flowers. On the other hand, if they are too heavily shaded, the foliage becomes weak, the growth does not ripen, and consequently has not strength to flower; besides this, it often causes the bottom leaves to fall off, and thus the plants lose much of their ornamental appearance, for a well-grown Vanda is an extremely beautiful object, even without its blooms. This plant, being a native of the Philippine Islands at no great altitude, requires the heat of the East India-house, and enjoys a moderate supply of water during its growing season, which is in the summer months. In the autumn and winter, less water will be necessary, but as these plants are growing more or less all the year round, and have no thick and fleshy pseudobulbs to support them through a period of drought, the material must always be kept in a moist condition. We find living sphagnum moss the best material in which to grow this plant, and the pots or baskets must be well drained.

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DENDROBIUM MACROPHYLLUM

DENDROBIUM MACROPHYLLUM.

[Plate 339.]

Native of New Guinea and Java.

Epiphytal. *Pseudobulbs* tufted, about a foot high, terete below, thickening upwards, becoming clavate and much furrowed, bearing on the apex two or three stout coriaceous leaves. *Leaves* some six inches long, sessile, oblong, unequally two-lobed at the apex, leathery in texture, and light green. *Scape* terminal, erect, furnished with numerous linear-oblong membraneous bracts. *Raceme* nodding and many-flowered, individual flowers some two inches across. *Sepals* and *petals* spreading, the sepals much the larger, ovate-oblong, acute, yellowish green, paler at the back, and densely hairy; petals smaller than the sepals, somewhat spathulate and undulate, dull white; *lip* large, three-lobed, lateral lobes erect, almost reniform, curved, but not meeting over the column, yellowish green, ornamented with forked and radiating lines of reddish purple, anterior portion transversely oblong, apiculate, green with a few dots of reddish purple, arranged in regular lines.

Dendrobium macrophyllum, *A. Richard, Sertum, Astrolabianum*, t. 9; *Williams, Orchid-Grower's Manual*, 6 ed., p. 292.

Dendrobium macrophyllum Veitchianum, *Reichenbach fil, Botanical Magazine*, t. 5649.

Dendrobium Veitchianum, *Lindley Botanical Register*, 1847, t. 25.

The typical *Dendrobium macrophyllum* is a native of New Guinea, and is a very rare and distinct species; we have had a totally different species in our gardens under that name for years; this, however, some few years back, was discovered to have been earlier named *D. superbum*. It is a bold and handsome plant, a figure of which appeared in the first volume of the *Orchid Album*, plate 42. The plant we here figure was introduced by that successful collector, Mr. Thomas Lobb, whilst travelling for the Messrs. Veitch & Sons, of Chelsea, and for many years it has been cultivated under the names of *D. macrophyllum* and *D. Veitchianum*. From the true *D. macrophyllum* it is said to differ chiefly in its lack of size, and Professor Reichenbach has decided that it is a variety only of the *D. macrophyllum* of A. Richard. This plant was discovered by Lobb in the hottest jungles of the island of Java, and although it cannot claim to rank with many of the gorgeous beauties of the genus *Dendrobium*, it is nevertheless a welcome addition to a collection where novelties and curious flowers are prized, and it is still a rare species, indeed, seldom to be seen, except in the best collections. The plant here represented was grown in the well-known collection of F. G. Tautz, Esq., Studley House, Goldhawk Road, Shepherd's Bush.

Dendrobium macrophyllum is a distinct and remarkable evergreen species. The stems are about a foot high, clavate, and deeply furrowed in the upper part, bearing three or four leaves of pale green. The spikes are produced from the apex of the stem, and are about a foot long, the blossoms being about two inches in diameter; the sepals are greenish yellow, hairy externally, the smaller spathulate petals being yellowish white, while the lip is greenish yellow, ornamented with numerous streaks and dots of reddish purple.

This plant grows naturally in the jungles of Java, in situations where it is both hot and moist nearly all the year round, consequently the warmest end of the East India-house will be found the most suitable place in which to cultivate it. Whilst growing it must be abundantly supplied with water; after the growth is finished it must not be kept entirely without moisture, but just enough to keep the plant from shrivelling and to ensure healthy foliage will be sufficient, and in the spring of the year its flower spikes will be developed. This plant begins to make new growth soon after it has flowered, and this is the proper time to re-pot it if requisite. Never allow stagnant soil to remain about its roots; if the plant should fall into bad health, it should be shaken out of the old soil, and the roots washed, and any decaying or decayed parts should be cut away, repotting in fresh sweet material with good drainage. It requires but little soil to grow in, and we find good fibrous peat and sphagnum moss the best material for it. Shade is very essential to this plant during the summer, as doubtless in a wild state it obtains partial shading from the surrounding trees. This plant does not like being much disturbed, and if it is in a healthy condition there is really no necessity to do so.

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CYPRIPEDIUM AMESIANUM

CYPRIPEDIUM AMESIANUM.

[Plate 340.]

Garden Hybrid.

Terrestrial. *Leaves* ligulate, arranged in a distichous manner, some nine inches in length, and an inch and a half in breadth, upper surface bright green, beneath slightly spotted near the base with deep purple. *Flowers* large, solitary; *dorsal sepal* ovate, white, veined and netted with green, and stained with soft brown on the lower part; *petals* similar to those of *C. villosum*, superior half chestnut-brown, inferior portion much paler; *lip* large, resembling in shape that of *C. villosum*, brown, suffused with flesh colour and green in front, the whole flower bearing that peculiar freshly varnished appearance so characteristic of *C. villosum* and its varieties.

Cypripedium Amesianum, *Williams' New Plant Catalogue*, 1887, p. 22.

Cypripedium Amesianum, *supra*.

This new hybrid Cypripedium we have dedicated to The Hon. F. L. Ames, of North Easton, Massachusetts, who has one of the finest collections of Orchidaceous plants in the United States of America. This plant is the result of a cross between *C. villosum* and *C. venustum*, the beauties of the two parents being well blended, both in the foliage and flower, forming a fine acquisition to this deservedly popular genus of Orchids. It is a free-growing variety, and also produces its large flowers very freely; moreover, as this plant thrives admirably in an intermediate house, or in the warmest part of an Odontoglossum house, it is doubly valuable. In a low temperature we find the foliage is more robust, and the flowers are also finer and of a better colour than when grown in strong heat, so that those possessing a cool Orchid house can grow it to advantage. *C. Measuresianum* is also best grown cool, and there are several other varieties which require the same treatment, so that by selecting those kinds for hybridising that succeed in a low temperature, a race of these "Slipper Orchids" may be obtained, which will prove hardier than many we already possess, and which will produce a rich array of colour in a cool house. Our drawing was taken from a fine plant which flowered in the Victoria and Paradise Nurseries, and from whence the stock placed in commerce last year was obtained.

Cypripedium Amesianum is a distinct and beautiful evergreen plant which grows about ten inches high; the leaves are from seven to nine inches in length, by one inch and a half in breadth, bright green, slightly spotted on the underside with deep purple. The ovate dorsal sepal is white, veined and netted with green,

and stained towards the base with soft brown; petals similar to *C. villosum*, the upper half being of a bright chestnut-brown, the lower portion much paler; lip large, resembling *C. villosum* in shape, tinged with green, and flesh colour in front, giving the flower a remarkable appearance. It blooms during the winter, and continues in perfection for two months or more.

As before remarked, this plant thrives best when grown in the Odontoglossum-house, in a temperature ranging from 45° to 50° of heat, during autumn and winter; indeed, the same temperature during the whole season as that given the Odontoglossums of the *Alexandræ (crispum)* type, with a good supply of moisture to the roots during the growing season (which is nearly all the year round), suits this plant exactly. A slight syringing overhead during the spring and summer will also be found advantageous. In order to produce strong and healthy foliage, the plant should be exposed to the full light, but it requires to be shaded from the bright sun during summer. The material we find to suit this plant is good fibrous peat and leaf-mould, adding a small quantity of turfy loam; the whole should be well incorporated, and the pots well drained before the soil is put into them. Good drainage is particularly important for Cypripediums, or the roots are very apt to decay, and without good roots it is not possible for a plant to remain in a healthy condition.

This plant is easily propagated by carefully taking off the young side shoots, but these should be rooted before they are removed from the parent plant; this operation is best performed after growth is completed, or when the plants are at rest. The young shoots should be put into small pots, and placed in a warm house until they are thoroughly rooted and well established, after which the cool house is best adapted to their requirements. These plants must be kept free from all insects, or they will become permanently disfigured.

BATEMANNIA COLLEYI.

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BATEMANNIA COLLEYI.

[Plate 341.]

Native of Demerara.

Epiphytal. *Pseudobulbs* oblong, compressed, furrowed and quadrangular, some two inches high, scaly at the base, and deep purplish green in colour. *Leaves* mostly solitary, broadly lanceolate, acute, narrowing at the base, strongly ribbed, coriaceous in texture, and deep green. *Scape* short, nodding, issuing from the base of a young but mature pseudobulb. *Flowers* large; *sepals* spreading, lateral ones much the longest, narrow, divergent, unguiculate; *petals* and *dorsal sepal* almost equal, erect, concave, the tips slightly reflexed, oblique at base, adnate to the base of the column, all of greenish hue, suffused with purplish brown; *lip* erect, appressed to the column, three-lobed, oblong, white, dotted and streaked with red, middle lobe notched in front. Column semi-terete, white freckled with red.

Batemannia Colleyi, *Lindley, Botanical Register*, xx., t. 1714; *Botanical Magazine*, t. 3818.

The genus *Batemannia* was established by Lindley, to commemorate the botanical labours of Mr. James Bateman, of Knypersley Hall, Cheshire. *Batemannia Colleyi* was introduced to this country in the year 1834, and was the first species assigned to the family. This plant, has, however, been discarded from our collections for some years, and we had not thought it of sufficient importance to recommend to notice in the pages of the *Orchid Growers' Manual*, for the plants we have usually seen of this species have had small blooms, and these have been dull in colour, quite unfit to recommend it to any one, saving those who grow a collection, and not a selection of Orchidaceous plants. This opinion, however, is materially changed since receiving the beautiful form which we now figure, and which will doubtless find many admirers for its distinct and curious outline, as well as for the beauty of its inflorescence.

We are indebted for the representation of this plant to the kindness of F. G. Tautz, Esq., Studley House, Shepherd's Bush, in whose collection it flowered in the early part of the present year, under the care of Mr. Cowley, the gardener.

Batemannia Colleyi is a dwarf compact-growing plant, forming dark green bulbs about two inches high, and bearing similarly dark green leaves about eight inches long. The flowers are of a curious form, borne upon short spikes, which spring from the sides of the bulbs near their base, and which form a cluster round them; sepals and petals purplish brown, and the lip white, tinged with rose. Its flowering season is during the mouths of March and April, and the blossoms continue in beauty for a considerable time.

This species is by no means difficult to cultivate; it should be treated as a pot plant, and be well drained, the best material we can recommend to plant it in being good fibrous peat and sphagnum moss. It should be elevated some two or three inches above the rim of the pot, and treated to the temperature of the intermediate or Cattleya-house. During the growing season a moderate amount of water is essential to its well-being, but during the dull days in winter a partial drying is equally necessary, but its resting must never extend to the shrivelling of its bulbs. If it is more convenient, this plant will grow equally well in a hanging basket; but we have suggested pot culture on account of its clustered flowers, which are seen to better advantage grown in this manner.

J. Nugent Fitch. del et lith

B.S Williams Publ.

CATTLEYA LAWRENCIANA .

CATTLEYA LAWRENCEANA.

[Plate 342.]

Native of British Guiana.

Epiphytal. *Pseudobulbs* clavate, compressed and furrowed, deep green in some forms, in others they become of a deep reddish brown, and are invested with numerous deciduous membraneous sheaths. *Leaves* solitary, oblong, from six to nine inches in length. *Scape* terminal, erect, issuing from between a brownish purple sheath, and bearing numerous flowers, which are between four and five inches across; *sepals* and *petals* spreading, the sepals being linear-oblong, acute; the petals much broader than the sepals and elliptic-oblong in shape, with undulated margins, all of a fine rosy purple colour, the petals in some forms being slightly darker than the sepals; *lip* oblong, emarginate in front, closely rolled over the column from the base, forming a long tube, where the colour is bright rosy purple, the expanded portion of the lip is rich dark rosy purple, with a dark purplish band in front of the white throat. *Column* triquete white.

Cattleya Lawrenceana, *Reichenbach fil*, *Gardeners' Chronicle*, xxiii., p. 338; *Reichenbachia*, i., t. 12; *Lindenia*, i., t. 44.

Although this Cattleya is new to cultivation, it appears to have been discovered in the year 1842 (upwards of forty years ago) by Sir Robert Schomburgk, and is alluded to by him in his "Travels in British Guiana"; he, however, erroneously believed it to be Cattleya Mossiæ. Nothing more appears to have been heard of this fine plant until 1884, when it was found by one of the collectors of Messrs. Sander and Co., and about the same time it was found by Mr. Everard im Thurn, who found it growing on the trunks of trees and the branches of shrubs which grow in the deep gully formed by the Kookenaam River, where it flows along the base of the south side of the twin mountains of Roraima and Kookenaam at an altitude of 3,750 feet, an account of its discovery being published in the *Gardeners' Chronicle*, in volume xxiv., p. 168.

During the past few years many new Cattleyas have been introduced to this country, but the one we here illustrate is a splendid species, and at the same time so very distinct, that it is singular how Schomburgk should have fallen into the error of mistaking it for C. Mossiæ. There have been several importations of *Cattleya Lawrenceana* recently, so that it is within the reach of Orchid growers generally, who should not neglect this fine plant, more especially as it appears to be of free growth, and a profuse bloomer. Several different forms have already appeared amongst the imported plants, which goes to prove that, like other Cattleyas, it varies considerably in colour, from the deep rich hue of the normal type, to others

of a paler tint. This splendid species has been named in honour of Sir Trevor Lawrence, Bart., M.P., who is well known to possess a very rich and rare collection of Orchids, and it is a worthy name to be given to such a noble plant. Our sketch was taken from a specimen grown in the Victoria and Paradise Nurseries, and Mr. Fitch has produced a faithful representation of the plant, the true colour not being obtainable in any other way than by hand painting.

Cattleya Lawrenceana grows from a foot to fifteen inches high, bearing dark furrowed stems and deep green leaves; the flower spike issues from a brownish sheath on the top of the bulb, and bears as many as nine of its richly coloured blossoms: our own plant, here figured, bore seven large blooms. The flowers stand out boldly, and produce a fine effect; the sepals and petals are of a fine rosy purple, the lip a rich dark rosy purple, and the throat white. It blooms during March and April, and continues in full beauty for four weeks if excluded from damp.

We cultivate this Cattleya in the same heat as the East Indian plants, suspended near the glass in a stove, where there is but little shade, and where it appears to thrive well. When in bloom it is removed to the Cattleya-house, to be replaced in its old quarters when the flowers are past. In all probability this Cattleya would do well at the warm end of an intermediate house, but its wild habitat suggests the necessity of a little higher temperature, and it also requires to be shaded from the hottest sun in order to preserve its leaves of a good colour, which is a very essential point in the cultivation of Orchids. In the matter of potting, it requires the same material as recommended for C. Mossiæ, viz., good fibrous peat mixed with a little sphagnum moss, and with perfect drainage, as the plant requires a fair amount of water in the growing season; but during rest, very little will suffice, indeed, just enough to keep the plants from shrivelling and in a healthy condition being all that is necessary, and in spring, when the flowers begin to show, the plants will then be much benefited by a little extra water to encourage their blossoms to open.

B. S. Williams Photo.

ODONTOGLOSSUM ROSSI AMESIANUM.

ODONTOGLOSSUM ROSSII AMESIANUM.

[Plate 343.]

Native of Mexico.

Epiphytal. *Pseudobulbs* clustered together, ovate, compressed with two sharp edges, monophyllus. *Leaves* oblong-lanceolate, some four inches in length and light green. *Scape* as long as the leaves, two to three-flowered, and bearing a thin sharp-pointed bract at each joint. *Flowers* two to three inches across; *sepals* and *petals* spreading, the sepals lanceolate-acuminate, greenish white, spotted and barred with chestnut-brown; petals much broader than the sepals, oblong-ovate, white, with a large chestnut-coloured blotch, which almost covers the basal half; *lip* clawed, broadly cordate, white, beautifully crisp round the edge; *crest* concave, yellow. *Column* white, suffused with purple, wingless.

Odontoglossum Rossii Amesianum, *supra.*

The typical *Odontoglossum Rossii* was first introduced to this country from Oaxaca in the year 1837, by Mr. Ross, who sent it to Mr. Barker, of Birmingham. It appears to grow wild nearly all over the Mexican plateau, and to vary considerably in its native country. Since its original discovery, it has been sent home by various collectors in great quantities and large masses, from amongst which many new and striking forms have appeared. It is one of the most useful and charming of the small-growing Odontoglots, the majority of plants of the recent introductions producing finer flowers than the original form. Some very distinct varieties of this plant have from time to time appeared, not the least striking of which is the plant whose portrait is here produced. It was recently exhibited by us before the Committee of the Royal Horticultural Society, and was awarded a First Class Certificate. We have dedicated this fine variety to the Hon. F. L. Ames, North Easton, Mass, U.S.A., into whose collection the unique plant has passed.

Odontoglossum Rossii Amesianum is a beautiful dwarf, compact-growing evergreen variety. It resembles the typical plant somewhat in habit, having small clustered bulbs and light green foliage; it is also very floriferous, producing numerous spikes from the sides of its newly made bulbs, which bear two or three flowers on each spike. The sepals are greenish white, spotted and barred with chestnut-brown, the petals being white, with a large chestnut-brown area at the base. It blooms during the months of April and May, and continues in beauty fully six weeks.

We find this section of the genus Odontoglossum thrive best when grown in shallow pans or small baskets, and suspended from the roof in a position which affords them all the light possible. Naturally, it grows on stunted trees by the

roadsides, where it obtains much light and but little shade. They thrive best in rough fibrous peat and sphagnum moss; the drainage must be kept in good working order, and the plant should be elevated above the edge of the pan or basket. The potting material must at all times be kept sweet, and free from stagnant moisture, as the roots grow more freely when they can work down amongst the soil and drainage material.

All the *Odontoglossum Rossii* section thrive best when grown cool, in similar situations and under the same conditions as *O. Alexandræ* (*crispum*) and its congeners, as, like them, they enjoy a cool moist house, in which they are shaded from the hottest sun, but are exposed to all the light possible to be obtained.

These plants are propagated by division, and the best time to perform the operation is just as they begin to grow, leaving about two bulbs at the back of the leading one. After they are divided, place the pieces in small pans, with the same material about them as we recommend above for old plants; hang them in a shady part of the house until they begin to make roots and grow, when they may be subjected to the same treatment as the established plants.

MASDEVALLIA HARRYANA DECORA

MASDEVALLIA HARRYANA DECORA.

[PLATE 344.]

Native of New Grenada.

Sub-terrestrial. *Stems* short, tufted, slender. *Leaves* evergreen, coriaceous in texture, some eight inches to a foot long, narrowly oblong, acute at the apex, tapering gradually to the base, channelled, keeled behind, and of a uniform deep green. *Scape* radical, erect, a foot or more high, bearing several bluntish appressed sheaths. *Flowers* large, terminal, solitary; *upper sepal* triangular at the base, becoming suddenly recurved, narrow and elongate; *lateral sepals* connate for about half their length, semi-ovate, apiculate, the points approximate, of a uniform light rosy purple, faintly striped with deeper purple, the rosy-purple passing into crimson at the tips; *tube* yellow; *petals* and *lip* all small, enclosed and hidden in the tube.

MASDEVALLIA HARRYANA DECORA, *supra*.

Masdevallia Harryana is an extremely variable, but a most charming species, and it is really surprising to see so many beautiful shades of colour, which originate from amongst an importation. The present plant appears to be of a different shade of colour to any we have hitherto noted amongst the numerous forms of this species. We have already figured several handsome varieties of this protean species, but yet there are many others well deserving depicting. Masdevallias are specially valuable, as they produce colours yielded by no other Orchids, and thus greatly assist in producing an artistic effect in our Orchid houses. Their flowers contrast beautifully with those of such Odontoglossums as *Alexandræ*, *Pescatorei*, *Rossii*, and other light-flowered kinds, which usually bloom at the same season, such an arrangement being more attractive than when all the colours are kept separate. Masdevallias when grown into specimens are well adapted for exhibition purposes, and produce a grand effect arranged with other plants distinct in colour. In the days of exhibiting our chief aim was to show distinct-coloured Orchids, so that our collection produced an effect that no judge could ignore. This combination of good contrasts can only be obtained by experience, and by studying which are the different coloured species and varieties which bloom at the same season. We have exhibited largely throughout the United Kingdom and in various foreign countries, extending over a space of forty years, and were seldom placed second in any Orchid competition, this success chiefly arising from the striking effect produced, independent of the general health and size of the specimens, and the same rule applies in the arrangement of our Orchids for home decoration, but this fact is too often lost sight of in the plant houses.

The splendid variety we here bring before our readers was taken from a very fine specimen in the collection of R. Warner, Esq., Broomfield, Chelmsford, who is now one of the oldest growers of established Orchids in this country, and from this collection many fine specimens, as well as new species and varieties, have emanated.

Masdevallia Harryana decora is a handsome variety; in habit of growth it resembles the typical form, and is equally free-flowering. The blossoms are of a light rosy purple, faintly striped with purple of a deeper hue, and the extreme tips of the sepals are crimson. The flowers are produced in April and May, and continue in all their pristine beauty for many weeks.

This variety requires the same treatment as the species, that is to say, it should be grown in a pot with ample drainage, and the potting material should consist of fibrous peat, and living sphagnum moss. It requires a liberal supply of water during active growth, after which much less quantity will suffice, though care should be taken to prevent its ever becoming dry, but to keep the soil moderately damp at all seasons. We find it advisable during the winter months to keep Masdevallias somewhat warmer than the Odontoglossums; they are plants that enjoy plenty of light, but require to be shaded from the sun. These plants are easily increased by dividing the creeping stem with a sharp knife, but avoid cutting the roots; these must be separated by the hand, and the operation is most successful when performed on vigorous plants, just before starting into growth.

These plants are subjected to the attacks of insects, which are very injurious to them if not speedily destroyed, more especially during the time they are making their young growth and are producing their flower spikes. Aphides and thrips increase very rapidly if not kept under. We find fumigating with tobacco paper is not good for the plants, but we have found the use of tobacco steam, as applied in a new apparatus, which we have introduced into this country, called the "Thanatophore," most beneficial in destroying these pests, moreover it does not injure the young growths or flowers. These insects, if allowed to remain on the plants, cripple the flower-buds and young growths so much that they are prevented from opening and attaining their proper size, besides which they are a great disfigurement to a collection of plants.

J. Nugent Fecit del. et lith.

B.S. Williams Publr

ONCIDIUM INTERMEDIUM.

ONCIDIUM INTERMEDIUM.

[Plate 345.]

Native of Cuba.

An epiphyte, producing from a creeping rhizome small, dwarf pseudobulbs, these when young are completely enveloped in large membraneous sheaths, which are deciduous. The *pseudobulb* bears a single, erect, stiff, fleshy leaf, which is oblong-acute, and carinate beneath, upwards of a foot long, and light green on both surfaces. The *scape* is erect, somewhat flexuose, panicled, and many-flowered, attaining a height of from eighteen inches to two feet. *Sepals* entire, the dorsal somewhat rounded, the lateral spathulate, all yellow, spotted and barred with chestnut-brown; *petals* same colour as the sepals, oblong and much waved at the edges; *lip* three-lobed, lateral lobes short, revolute, and obtuse; anterior lobe reniform, flat and spreading, the crest composed of two prominent lobes, and three callosities. *Colour* clear yellow.

Oncidium intermedium, *Knowles and Westcott, Floral Cabinet*, p. 60.

Oncidium luridum intermedium, *Lindl., Folia Orchidacea, Art. Oncidium*, No. 131, D.

The genus *Oncidium* is one of the largest in the whole Orchid family, and is exclusively confined to tropical America. It is closely related to Odontoglossum, the principal difference being found in the much shorter and broader column of Oncidium. This genus contributes largely to the decoration of our Orchid houses, as amongst the numerous species are to be found flowers of almost every shade of colour, although yellow in various shades predominates. Many of the species of this genus are found growing at considerable elevations in the mountain regions of South America, and there are doubtless many more undiscovered species yet to come, to give fresh encouragement to cultivators, and which will add to the varied display of our Orchid houses. The flowers of the majority of the kinds last long in full beauty, and many of them are eminently suited for personal decoration, or in a cut state for the embellishment of the dwelling-house.

Our present subject belongs to the Miltoniastrum section of the genus, which contains many handsome species. It is an old inhabitant of our gardens, having been introduced from the Island of Cuba in the year 1837; but it is seldom seen, and, indeed, but little known amongst Orchid growers, and this latter fact, coupled with its beauty, has induced us to bring it to the notice of our subscribers. The species flowered with us in the Victoria and Paradise Nurseries in the course of the present year, and our artist, Mr. J. N. Fitch, has produced a faithful representation of both plant and flowers.

Oncidium intermedium is a distinct and beautiful evergreen plant, compact in growth, producing light green, fleshy leaves, a foot or more in height; the spike is erect, and attains to about eighteen inches in length, and bears a much-branched raceme of showy flowers, which are very numerous. The sepals and petals are yellow, distinctly spotted and barred with chestnut-brown. It blooms during the months of May and June, and continues in full beauty for several weeks.

This species requires the heat of the Cattleya-house, and thrives best when placed in a position to obtain all the sun and light possible, just giving it sufficient shade to prevent its leaves burning. Treated in this manner it will be found to grow and flower most freely, and doubtless many other Oncidiums would thrive better under the same conditions than they do at present, as many species grow naturally in exposed situations.

We find *O. intermedium* thrives well in a basket suspended from the roof, and near the glass: the baskets should be well drained, and the most suitable potting material is a mixture of good peat fibre, living sphagnum moss, and a considerable quantity of nodules of charcoal, in different sizes, mixed with it. This mixture will enable the roots to easily penetrate it, and throw out their tender points to absorb the moisture, with which the atmosphere should be well charged in the growing season. When growth is completed the plants must not be entirely dried, as they have but very small bulbs to support any great drought; but the water supply should be considerably diminished, and the plant kept in just that happy medium which prevents shrivelling, but does not force it into growth prematurely.

Saccolabium cœleste.—This charming species is totally distinct from any other plant yet introduced to cultivation, and when thoroughly established, will prove a great acquisition to this genus. The colour is exquisitely beautiful, being of just that shade of blue which is so highly appreciated, and which is so rare amongst Orchidaceous plants. It is a free-blooming species, belonging to the section of which *S. curvifolium* and *S. ampullaceum* are such well-known and highly admired examples; and this plant, with colours so distinct, forms a charming contrast. Since its first discovery several importations have been received in this country, and amongst them several varieties have appeared, varying more or less in intensity of colour, but the one here noted, which bloomed in the Victoria and Paradise Nurseries, and was exhibited by us before the Committee of the Royal Horticultural Society on Tuesday, July 25th, was exceptionally fine; it was much admired, and was awarded a First Class Certificate. This species produces fleshy, carinate, deep green, recurved leaves, some six inches in height. The plant in question bore two erect spikes, each nearly a foot high, and many-flowered. The sepals and petals are white, tinged and tipped with azure-blue; the lip being wholly of a deep shade of the same colour. We intend figuring this species in the *Orchid Album* in order that our numerous subscribers may be able to draw their own conclusions as to the merits of this lovely plant.—**B. S. W.**

LÆLIA PURPURATA ALLENHEIMENSE.

LÆLIA PURPURATA BLENHEIMENSE.

[Plate 346.]

Native of Southern Brazil.

Epiphytal. *Pseudobulbs* stout, oblong fusiform, somewhat compressed, from one foot to two feet high, becoming ribbed with age, in the young state smooth, and clothed with large membraneous sheaths. *Leaves* solitary, erect, persistent, narrowly oblong, emarginate, thick and coriaceous in texture, rich deep green on the upper side, slightly paler beneath. *Peduncle* three to five-flowered, proceeding from a terminal somewhat oblong foliaceous spathe. *Sepals* linear-lanceolate, acute, of a uniform rosy blush, distinctly streaked with deep rosy purple; *petals* broader than the sepals, and nearly flat, ovate-oblong, obtuse and crisp at the edges, deep rose-purple, streaked and veined with dark purple; *lip* three-lobed, the lateral lobes small and very obscure, the basal portion rolled round the short column; the anterior lobe large and spreading, semi-ovate, crisp at the edge, wholly of a deep rose, veined with intense dark purple, the throat being rich yellow, streaked with deep purple. *Column* shorter than the lip. Pollen masses, 8.

Lælia purpurata Blenheimense, *Hort.*

There appears to be some difference of opinion as to whom we are indebted for the introduction of this fine species. One authority asserts that it was first introduced to cultivation by Mr. Brys, of Bornhem, in Holland, and that it was named *Lælia Brysiana*, in compliment to him; and there is a figure of a plant under that name in *L'Illustration Horticole* for 1857, t. 134. Unfortunately, the plant there portrayed is not a form of the present species at all, but a variety of *L. elegans* rather, though there certainly used to be, some years ago, a form of *Lælia purpurata* grown in English gardens, under the name of *L. Brysiana*, which was distinguished from *L. purpurata* by its deep rose-coloured sepals and petals, and very dark lip. Another authority claims that the plant was first discovered by François Devos, and sent to the nursery of M. Verschaffelt, in Belgium. The plant is a native of the province of St. Catherine, in Southern Brazil, and was introduced in a living state in the year 1847. It was first flowered in this country by the Messrs. Backhouse and Son, of York, and was exhibited by them at one of the garden meetings of the Horticultural Society, held at Chiswick. For some years this was a rare plant in English collections, but latterly it has been sent home in large quantities by the numerous collectors now employed to search almost every spot in the tropical world for horticultural novelties. Many splendid varieties have appeared amongst the different importations, and the one whose portrait we here introduce to our subscribers is most beautiful and distinct, and is

one which will form a good contrast with those forms with light sepals and petals, the darker varieties being still rare. There is a splendid variety, named *L. purpurata Williamsi*, but it is still exceedingly rare; a figure of this form is given in Vol. i. of this work, plate 9—10, the plant from which it was taken being now in the rich collection of Baron Schröder, The Dell, Egham. The subject of the accompanying plate was kindly sent us from the grand collection of his Grace the Duke of Marlborough, Blenheim Palace, Woodstock, in whose establishment the cultivation of Orchids is carried on in an extensive manner, under the superintendence of Mr. Whillans, who has charge of the collection.

Lælia purpurata Blenheimense is a magnificent and distinct variety, but in growth it does not differ from the typical plant. The sepals are blush-rose, streaked with deep rose-purple; petals very flat, also deep rose-purple, streaked with purple of a deeper hue; lip deep rose, veined with intense dark purple, the throat yellow, streaked with purple. It blooms in June, and its flowers continue in perfection from three to four weeks.

This free-growing variety requires the same treatment as the species, that is to say, it should be placed at the warmest part in the Cattleya-house, and on the middle stage, as it attains considerable dimensions and needs ample space to develop its bulbs and foliage. An important item in the cultivation of *Lælia purpurata* is abundance of light, in order to enable the plant to produce robust and well-matured bulbs, without which it will not flower freely. When the flowering season is over, the season of growth of this species commences, and if the plants are not carefully attended to failure will creep in. This is the best time to re-pot should it be required, but do not over-pot, as this is dangerous unless the plants are carefully watered, tending to cause a greater quantity of wet soil to lie about them, The plants should be well elevated above the pot in order to allow the roots to spread. The great secret of success in the management of this species is to induce the plant to produce strong roots outside as well as inside the pot. A slight syringing over their roots in the summer months in the afternoon, just as the house is closed, will be found highly beneficial. Slight shade is necessary during the hottest part of the day, but this should not be allowed to cover them at any time when the sun is not shining; indeed, the plants should be subjected to the influence of the sun's rays at all times when not powerful enough to injure the leaves. Thorough drainage is essential to these plants, and the best potting material is good fibrous peat from which all the fine particles have been well shaken; to this add some living sphagnum moss.

BRASSIA KEILIANA TRISTIS

BRASSIA KEILIANA TRISTIS.

[Plate 347.]

Native of Caracas and Ocaña.

A dwarf, compact-growing evergreen epiphyte, bearing small, clustered ovate pseudobulbs; these when young are surrounded by numerous accessory, strongly-ribbed leaves, which, however, are not persistent. *Leaves* oblong-lanceolate, acute, some ten inches long and light green. *Scape* axillary, eighteen inches long, terminating in an arching, many flowered raceme. *Bracts* narrowly boat-shaped, longer than the ovaries, thin in texture. *Sepals* and *petals* linear, lengthened out into tail-like processes, the latter slightly the broader and shorter, all of a deep amber-brown; *lip* large and flat, oblong, caudate in front, pale lemon-yellow, bearing a few oblong brown spots near the base.

Brassia Keiliana tristis, *Reichenbach fil. MSS.*

Our present subject belongs to a somewhat extensive genus, all of which are natives of the western hemisphere; they are nearly allied to the Oncidiums, from which, however, *Brassia* is distinguished by its short earless column, by the presence of a pair of vertical plates on the lip, and by its narrow and much elongated, tail-like sepals and petals. This latter character, however, is not a reliable one, as one or two species of Oncidiums have these organs considerably elongated, *O. phymatochilum* being a familiar example. The flowers of the Brassias are distinct in appearance from those of other Orchids, some of the species and varieties being exceedingly beautiful, well deserving the attention and care of cultivators. They have graceful racemes of curiously-formed flowers, the form here depicted forming an apt illustration, whilst several other kinds, well deserving the care of amateurs and gardeners, are described in the 6th edition of *The Orchid Growers' Manual.* Brassias, when in bloom, have a charm peculiarly their own, and for this reason we have introduced the present variety to our readers, as it is our aim to illustrate good and desirable forms of all the genera in cultivation, in order to show how great is the diversity of nature's productions even in this one order of plants, although they are not all so showy or so strikingly beautiful as the numerous varieties of Cattleyas and Lælias, &c., &c.

The various species of the genus which were formerly grown, fell into disrepute some years ago upon the introduction in quantity of more showy-flowered kinds; indeed, they were almost discarded from our collections, and consequently have only been imported in small quantities, so that now they are becoming popular again, they are, to some extent, rarely to be obtained.

We are indebted to Reginald Young, Esq., 3, Linnet Lane, Ullett Road, Liverpool, for the subject of our illustration, which was a well-grown, healthy specimen, and of which our artist has rendered an excellent representation.

Brassia Keiliana tristis is dwarf in its habit of growth, and evergreen; the pseudobulbs are small, bearing numerous, somewhat plicate leaves, which are some ten inches long, and light green in colour. The scape rises from the side of the bulb, and is arching, some eighteen inches long, and bears a raceme of many flowers, the sepals and petals of which are of a deep amber-brown; lip lemon-yellow, blotched with brown at the base. It blooms in May and June, and lasts in beauty for about three weeks.

This Brassia will thrive equally well in either pot or basket, and enjoys the temperature of the intermediate house. It grows freely and blooms profusely if properly attended to during its season of active growth, and accorded a fair season of rest, without being subjected to a too severe drying. The pots should be well drained, and the potting material should be good peat fibre, with the addition of some living sphagnum moss. The plants should be well elevated above the rim of the pot, upon a cone-like mound, for as they enjoy copious waterings during the growing season, this system causes the water to pass away rapidly, and thus stagnation is avoided. If grown in baskets, the same material should be used as before recommended, and the basket or baskets suspended from the roof near the glass, in order to afford the plants an abundance of light; they require, however, to be shaded from the hottest sun. These plants grow naturally in somewhat shady places, so that if fully exposed under glass to the sun's influence, the foliage soon becomes yellow and permanently disfigured.

The best time for re-potting, if the plants require it, is just as they begin to start into fresh growth, using every care to avoid injuring the young roots, and any roots which have been covered should not be exposed, as the change often proves injurious. In the resting season much less water will be necessary, but never allow the bulbs to shrivel.

If required, these plants may be increased by dividing the bulbs at the time of re-potting; one or two old bulbs should be left with each leading shoot, these divisions being put into small pots at first, and they should be kept in a somewhat close place until established.

A Fine Variety of Lælia elegans.—We have to acknowledge the receipt of a wonderful spike of bloom of *Lælia elegans* variety, sent us by Joseph Broome, Esq., of Llandudno; it is undoubtedly one of the finest varieties that have come under our notice, and somewhat resembles in colour *L. elegans Morreniana*, but is distinct from that variety. The flowers are six inches across, of intense colour; the sepals and petals are of a bright rosy purple, the sepals being spotted with purple; the lip is large and well opened, of an intense crimson-purple, the throat white, partly striped with purple; the side lobes of the exterior of the lip, which enclose the column, are white, tinged with rose towards the edges. The flowers have a beautiful perfume, and we congratulate Mr. Broome on having such a grand Lælia in his possession.—B. S. W.

B.S.Williams

ODONTOGLOSSUM VEXILLARIUM ROSEUM.

ODONTOGLOSSUM VEXILLARIUM ROSEUM.

[Plate 348.]

Native of New Grenada.

Epiphytal. *Pseudobulbs* small, from an inch and a half to two inches (or more) high, narrowly oblong, compressed, pale green, and furnished with numerous accessory leaves, which spring from the base, and envelope the pseudobulbs when young. *Leaves* narrowly elliptic, lanceolate, acuminate, slightly keeled at the back, from six inches to a foot long, upwards of an inch wide, and of a pale green hue on both surfaces. *Scape* radical, several arising simultaneously from one pseudobulb, longer than the leaves, and terminating in a raceme of from five to seven large and showy flowers. *Sepals* and *petals* obovate-oblong, acute, recurved, the petals being slightly broader and more obtuse, the whole of a soft rose colour; *lip* very large and flat, deeply two-lobed in front, and contracted into a claw at the base; the colour a uniform clear rose; the claw a pale yellow, with a few red streaks. *Column* very short, yellow.

Odontoglossum vexillarium roseum, *Hort. Williams, Orchid-Grower's Manual*, 6 ed., p. 468.

Odontoglossum vexillarium is undoubtedly one of the most beautiful of the Odontoglots, notwithstanding the fact that Professor Reichenbach has suggested that *O. Warscewiczii* might prove a dangerous rival; but the last-named species has not yet proved itself to be half so beautiful as the plant here depicted, which appears to have been first found by Bowman on the western slope of the Andes of New Grenada, and was first received in a living state in this country by Messrs. J. Veitch and Sons, of Chelsea, through Mr. Chesterton. The plant in question is one of the freest-growing and most profuse-blooming kinds in the whole genus; but it is subject to great variation, both in size and colours of its flowers. We have already figured two very distinct varieties of this species in the *Orchid Album*, viz.: Vol. iv., plate 171, shows a lovely form called *O. vexillarium superbum*, the colours being very rich and distinct, the deepest in fact which we have hitherto seen; and in Vol. v., plate 227, is a faithful representation of *O. vexillarium album*, in which the colour is entirely absent and the flowers are of the purest white. Both these forms still remain very rare in cultivation. Here we have the pleasure of bringing before our readers the portrait of a charming rose-coloured form, which claims a record in these pages with the other two. Besides these, however, there are many other fine varieties with large blooms.

Our drawing was taken from a very fine specimen grown in the collection of M. le Comte de Germiny, Chateau de Gouville, France. This specimen bore eighteen

spikes of bloom, each flower measuring five inches across. At the time of our visit there were many fine plants of this species in bloom, and amongst the different varieties was a fine plant of *O. vexillarium Cobbianum*, *O. vexillarium album*, and many other rich-coloured forms, the blooms of which produce a very charming effect intermixed with other fine Orchids in which the collection abounds; and Mr. Vincent, the gardener, displays excellent taste in contrasting and diversifying the various colours of his Orchids after having grown them.

Odontoglossum vexillarium roseum is a magnificent evergreen variety, resembling the typical plant in its small, narrowly oblong, compressed pseudobulbs, which are light green in colour; the leaves are elliptic, lanceolate, acuminate, some ten inches in length, and upwards of an inch in breadth. The spike is erect, produced from the side of the bulb; frequently two, and sometimes three spikes are produced together from the same bulb, each bearing from five to seven flowers of large size. The flowers are of good subtance, and the colour clear rose. It blooms during the months of June and July, and they last in perfection fully four weeks if preserved from damp, non-observance of which is the cause of many fine Orchid blooms becoming spotted, thus causing premature decay.

We have frequently pointed out the fact that this species of Odontoglossum requires somewhat different treatment from the majority of the other kinds. It is free in growth, but requires to be constantly watched in order to prevent the thrips gaining a lodgment in the sheathing portion of the leaves, or these insects speedily cause the leaves to become spotted and turn black, which by no means improves the appearance of the plants. This species will amply repay any extra care bestowed upon it, as the stronger the growths the greater amount of blossoms, and when the plants are vigorous, they not only produce flowers of larger size and deeper colour, but they remain in perfection a greater length of time. Mr. Vincent grows them in a temperature slightly lower than is given to the Cattleyas; we grow them on one side of the house in which our Cattleyas and other flowering Orchids are arranged. The Odontoglossums are placed on one side by themselves, so that as much water as they require can be readily given. These plants should be kept moist at the roots at all seasons, as they require little or no rest, and should never be allowed to get dry; but, as a matter of course, very much less water is necessary during the dull months of winter. This species requires to be shaded from the strongest sun in summer; but it should be fairly exposed to the light, and therefore succeeds best when grown near the glass. Pot cultivation suits it well, if the pots are well drained, and the potting material should be good fibrous peat and sphagnum moss. Care must be taken to maintain the soil in perfect order, as we find the plants rapidly melt away if any stagnant material is left about them. The re-potting should be done immediately after the flowering season, which will be just as they begin to make new growth, bearing in mind to keep the bulbs well above the soil.

J. Nugent Fitch del

B.S. Williams Pxt

TRICHOPILIA TORTILIS

TRICHOPILIA TORTILIS.

[Plate 349.]

Native of Mexico.

Epiphytal. *Pseudobulbs* clustered, surrounded with curiously spotted sheaths, narrowly oblong, compressed, about four inches long, and monophyllous. *Leaves* oblong acute, coriaceous in texture, and light green. The *peduncles* emerge from the base of the pseudobulbs, and bear a single, large and handsome flower. *Sepals* and *petals* nearly equal, spreading, linear-lanceolate, some two inches long, and spirally twisted, undulated, yellowish green on the edges, the centre dull purplish brown; *lip* broad and spreading, the base curiously rolled round the column, white, irregularly spotted with deep rose-colour, and blotched in the throat with yellow. *Column* terete, clavate.

Trichopilia tortilis, *Lindley, Botanical Register*, xxii., t. 1863; *Maund's Botanist*, iii., t. 122; *Knowles and Westcott's Floral Cabinet*, iii., t. 101; *Botanical Magazine*, t. 3739; *Gower and Britain's Orchids for Amateurs*, p. 48; *Williams, Orchid-Growers' Manual*, 6 ed., p. 594.

This is not a very extensive genus, but it is most remarkable for the peculiar formation of its flowers, and these are produced in a somewhat different manner to those of most other Orchids. The genus includes some species and varieties possessing great beauty, which, when well grown and flowered, produce an astonishing effect. Some wonderful examples of the species of this genus have from time to time come under our notice, the most notable being a specimen of *Trichopilia crispa*, which some few years ago was frequently exhibited by Mr. Charles Penny, now of Sandringham, but at that time holding the position of gardener to H. H. Gibbs, Esq., of Regent's Park; but the very finest example of *T. crispa* which has ever come before our notice was a single specimen bearing a hundred and twenty flowers, grown by R. Warner, Esq., of Chelmsford, and which was sent by him, with numerous other Orchids, to the First International Horticultural Exhibition held in Russia, at St. Petersburgh, in May, 1869. This specimen was greatly and deservedly admired by all who saw it both at home and abroad. Other fine Trichopilias are *T. suavis*, and its pure white-flowered variety, *alba*; *T. lepida* also is a lovely species when well grown, but a glance at our plate of *T. tortilis* will also illustrate what a fine old species this is, which, although it has now been in cultivation for upwards of fifty years, is well deserving a place in the most *recherché* collection, for seen—as we have seen this species—with upwards of seventy blossoms, it forms a splendid bouquet of floral beauty to which neither pen nor brush can render justice. Our drawing was taken from a plant growing in the Victoria and Paradise Nurseries.

Trichopilia tortilis appears to have been introduced from Mexico about the year 1835, by Mr. Barker. It is a distinct evergreen species, the bulbs varying from two to four inches in length; these are bright shining green in colour, and bear a solitary leaf, some six inches long. The flowers are produced below the leaves, and form a floral band, surmounted with a crown of green leaves. The sepals and petals are narrow, and spirally twisted; they are of a lurid brownish purple, irregularly bordered with yellowish white; the lip is broad and spreading, the exterior white, yellowish white or white within, thickly spotted with rose-colour, and blotched with yellow in the throat. The blossoms are produced both in spring and winter, but we have observed that the greatest numbers of flowers are produced in the months of May and June, and they last for a considerable length of time in full beauty.

The name Trichopilia was suggested to Lindley for this genus from the peculiar hood or cap which surmounts the column, and which bears three peculiar tufts of hair, hence Lindley's name of Trichopilia (hair-cap). They are all natives of Mexico, Central America, and the West Indian Islands, often at considerable elevations. Basket or pot culture suits these plants well, but if well elevated above the pot's rim, they perhaps flower most abundantly in this manner. In potting, above all, provide good drainage, and for soil use good fibrous peat, through which may be worked some moderate-sized nodules of charcoal, which will allow the roots to penetrate it better, and at the same time assist in carrying away the water more quickly. The species here depicted is a free-growing plant, if given moderate attention. It requires a medium supply of water to its roots during the season of growth, but it enjoys an atmosphere well charged with moisture; and although the water supply to the roots must be considerably reduced through the winter months, it must never be entirely withheld, as the slightest amount of shrivelling is injurious. This plant should be grown at the cool end of the Cattleya-house, well exposed to the sun and light, but should have the sun screened from it during the hotter part of the day, in order to preserve the colour of its foliage, which forms such an admirable background for its blossoms.

It is not very liable to the attacks of insects, but scale, and even thrips, will sometimes affect it, more especially if the plant is in a slightly bad state of health; but watchful care on the part of the cultivator will prevent these pests from gaining a lodgment. The plants may be increased, if necessary, by division; but it is far better to have one fine plant than several small ones. The division should be made just as the new growths appear, and several old bulbs should be left at the back of the leading growth. The divisions may be potted and treated in exactly the same manner as the established plants.

CYPRIPEDIUM FITCHIANUM

CYPRIPEDIUM FITCHIANUM.

[Plate 350.]

Garden Hybrid.

A terrestrial plant, with distichous, oblong acute leaves, which are some six inches in length, and one and a half inches in breadth, ground colour greyish green, conspicuously marbled and blotched with deep olive-green. *Scape* erect, eight or nine inches high, densely clothed with short woolly hairs of a purple hue, one-flowered. *Dorsal sepal* ovate, acute, greenish white, boldly streaked with lines of deep green; *lateral sepals* similar in colour to the dorsal, but much smaller, and, like it, downy on the outside; *petals* ligulate, obtuse, spreading, upwards of two inches long, and half an inch broad, nearly uniform in breadth throughout, undulated on both edges, basal portion bright green, strongly veined with deeper green, passing upwards into dull purplish red, and ornamented on both margins, with a few large black hairy wart-like spots; *lip* oblong, obtuse, shortly unguiculate, large, and bold, pale yellowish green, veined with deep green, and suffused with dull purple, the inner side covered with a profusion of crimson dots, which show through to the exterior. *Staminode* somewhat reniform, with a small umbo, centre greenish yellow, reticulated with deep green.

Cypripedium Fitchianum, *supra, Williams' New Plant Catalogue*, 1888, p. 20.

At the present time the genus *Cypripedium* is exceedingly popular, and new forms are continually appearing through importations from abroad, as well as from the work of the hybridiser at home; indeed, the crossing and re-crossing of the different species and varieties appears to be a favourite pursuit with amateur growers, as well as those connected with the trade in orchidaceous plants, and from the result of whose work many excellent, new, and beautiful varieties have emanated, whilst from the experience gained in previous experiments, many other and superior forms may be confidently anticipated. Cypripediums are amongst the easiest of plants in the whole order to fertilise, and for this reason they have been taken in hand by the many; they also come freely from seed, and in most instances are robust in constitution, and produce flowers in a young state, so that it is little wonder that they are very popular, especially as many of them produce showy flowers, although in a different degree of excellence, which continue long in full perfection. Many beautiful species and varieties of this genus have already appeared in the *Orchid Album*, but there are many more which we hope to introduce in the same manner to the notice of our readers.

The accompanying figure is that of a plant which we had the pleasure to introduce to commerce in the spring of the present year, and which we have named

in honour of our artist, Mr. John Nugent Fitch. It is the result of a cross between *Cypripedium Hookeræ* and *C. barbatum*; it is a very free grower, and also a prolific blooming plant, thoroughly distinct, both in foliage and flower, from any other kind known to us.

Cypripedium Fitchianum is a distinct and pretty variety, and compact in its habit. The leaves are oblong acute, from four to six inches in length, by about one and a half inches in breadth, and prettily variegated; the ground colour is greyish green, marbled and spotted with deep olive-green. The scape rises well above the foliage, and bears a single large and handsome flower. Dorsal sepal somewhat ovate cuneate, white, conspicuously veined with bright green, the lower sepal being similar in colour, but smaller; petals long and strap-shaped, with blunt ends, green towards the base, the apical portion and the margins being suffused with deep red, and bearing a few black hairy warts on the edge; lip large, dull red, veined in front with green, the inner surface profusely covered with dots and spots of red. It blooms in the winter months, and continues in perfection for fully six weeks.

We think this variety of Slipper Orchid thrives best in the East India house, as may have been anticipated by a knowledge of its parents, which are both natives of warm places in the east, but we find that this, and the majority of the other members of this genus, succeed best when shaded from the direct rays of the sun during the hotter part of the day, although they enjoy full exposure to the light, and we have recently observed great improvement in the health of the plants in one or two collections, where these plants have been subjected to a greater amount of shade from the sun than was formerly given them. Perfect drainage is essential to the health and well-being of Cypripediums, as during growth they enjoy copious supplies of water to their roots, which, however, requires to be passed away quickly; a slight syringing overhead in the morning, and again in the afternoon during the growing season, will be found highly advantageous. The potting material should consist of good peat fibre, and living sphagnum moss. These plants do not require a lengthened period of rest, but during this time syringing must cease, and a considerable reduction made in the quantity of water supplied to the roots, but even at this season they must not be dried, or evil results will follow.

Insects should be carefully watched for, and speedily destroyed if they make their appearance on the Cypripediums, or their leaves will quickly become marred and disfigured, and the plants fall into a sickly condition. Black thrips and red spider are amongst their worst enemies, but these may be effectually kept in abeyance by steaming the house occasionally with tobacco juice from the Thanatophore.

J Nugent Fitch del

R.J.Willis

RODRIGUEZIA SECUNDA.

RODRIGUEZIA SECUNDA.

[Plate 351.]

Native of Tropical America.

A compact-growing dwarf epiphyte, with small oval compressed pseudobulbs, which bear oblong-lanceolate obtuse leaves, somewhat coriaceous in texture and deep green. *Scape* axillary, nodding, six to nine inches long; *raceme* secund, many-flowered. *Flowers* crowded, deep rose-coloured, or lively pink; *sepals* and *petals* small, erect, nearly equal; *lip* unguiculate, entire, obovate, furnished with a short spur or gibbosity at the base. *Column* terete, bearded at the apex.

Rodriguezia secunda, *Kunth, Botanical Magazine*, t. 3524; *Botanical Register*, xi., t. 930; *Williams, Orchid-Growers' Manual*, 6 ed., p. 561.

Rodriguezia lanceolata, *Loddiges' Botanical Cabinet*, t. 676;

Pleurothallis coccinea, *Hooker's Exotic Flora*, t. 129.

This is a somewhat small genus of epiphytes, originally named by Ruiz and Pavon, to do honour to Emmanuel Rodriguez, a Spanish doctor and botanist of eminence of that time, afterwards some of the species were transferred to the genus Gomeza of Brown, but this Lindley considered insufficiently distinct to be maintained. Other authors, again, refer the members of Burlingtonia to Rodriguezia, from which, however, to us they appear distinct. Be this as it may, the plant we here figure is a most distinct and pretty Orchid; its bulbs and foliage are small, and its racemes of bright pink flowers are very graceful, whilst its dwarf habit allows of its being accommodated by those whose space is very limited. The plant appears to have been introduced some seventy years ago, but yet it is seldom seen in cultivation, although said to be plentiful in a wild state, where it appears to prefer dead wood; and we trust that the publicity given to this species by the publication of the present plate, may restore it to popularity, and thus induce collectors to send masses of it home in quantity, as it cannot fail to well repay those who delight in these small-growing and exceedingly interesting plants. For the opportunity of figuring this beautiful small-growing species we are indebted to the kindness of Professor Dyer, Director of the Royal Botanic Gardens at Kew, in which collection are to be found many exceedingly curious and interesting plants, which one seldom has the opportunity of examining elsewhere.

Rodriguezia secunda is an evergreen species, having small, oval, compressed pseudobulbs, and light green leaves. The spikes are produced in the axils of the leaves, near the base of the bulbs, and attain a length of from six to nine inches;

they bear a raceme of deep, sparkling, rose-coloured or lively pink flowers, which, as its name implies, are all gathered to one side. These flowers sparkle and glitter in the light as if covered with frost crystals. Its usual time of flowering is during the autumn and winter months, and the blooms continue in beauty for several weeks. We find this plant to thrive best in the Cattleya-house, in a small hanging basket, or suspended on a block of wood; but in whatever way it may be grown it should have very little soil about its roots. The drainage must be maintained in thoroughly efficient order, for although an atmosphere well charged with moisture is very conducive to its well-being, the roots prefer absorption from the air to having a quantity of wet sour material constantly about them. It requires a considerable amount of moisture during the growing season, and at no time in the year should it suffer from drought, as its diminutive bulbs cannot support it in health for any length of time without water; inattention to these small matters often cause the cultivator much loss and disappointment. This species does not like to be disturbed, so that if the plant is thriving in any particular position allow it to remain, for frequently it is found that one part of the house is more suitable than another for different plants. It will not require re-basketing often, but when this is necessary, the new material should be placed about it just after new growths appear.

J. Nugent Fitch del.

MASDEVALLIA BURGHERSTHII

CATASETUM BUNGEROTHII.

[Plate 352.]

Native of Ecuador.

A terrestrial plant, with fleshy-stemmed pseudobulbs, which are fusiform in shape. *Leaves* lanceolate, acute, membraneous and plaited. *Raceme* six- to twelve-flowered. *Flowers* large and pure ivory-white; *sepals* and *petals* spreading, the latter much the larger, and with the dorsal sepal directed upwards; *lip* transversely oblong, deeply concave, and furnished with a short obtuse spur, bidentate at the apex. *Column* short, obtuse, cirrhis attached to the base, somewhat thick and horn-like.

Catasetum Bungerothii, N. E. Brown, *Gardeners' Chronicle*, third series, 1887, i., p. 139; *Lindenia*, ii., t. 57; *L'Illustration Horticole*, 1887, t. 10; *The Garden*, xxxiii., 1888, p. 388, t. 646.

The singular plant whose portrait we have much pleasure in introducing to our readers, is a member of a somewhat large genus, remarkable for their quaint, often large, and attractive flowers, which, however, seldom have any claim to elegance; but the species here figured is an exception to the rule, and it certainly must be called a bold and handsome-flowered form. The whole of this genus of Orchids are natives of the tropical part of the New World, and are all deserving cultivation by those having space at command. The singular structure of their flowers, and the amount of uncertainty as to what shaped flower or flowers are to be produced, is quite enough to cause Professor Reichenbach's statement to be fulfilled: he says if one "takes Catasetums into their stoves, they are sure to become more or less bewitched, sooner or later." *Catasetum Bungerothii* at present has not produced any variations but in colour, but we cannot tell what it may do. Sir R. Schomburgk found in Demerara, some years ago, a Catasetum in bloom, the raceme bearing flowers of very different structures, exactly resembling those which botanists have assigned to the genera Catasetum, Myanthus, and Monocanthus. The same thing occurred under cultivation in the gardens of the Duke of Devonshire, at Chatsworth, and several instances have occurred in which two kinds of flowers have appeared simultaneously on one plant. Dr. Lindley has said "no one can pretend to form a positive opinion as to what are natural, what monstrous, what permanent, what accidental, states of the genus Catasetum." The form of the plant here figured is very beautiful, and when better known, will find many admirers amongst Orchid growers. It was discovered in Ecuador by M. Bungeroth, whose name it bears, and was sent by him to the Compagnie Continentale d'Horticulture, in Ghent. Several varieties have already appeared from amongst the imported plants, the most valuable of which is *C. Bungerothii Pottsianum*, in which the petals differ

from the typical plant in being faintly spotted with carmine, and the throat yellow. Another beautiful variation is *C. Bungerothii aureum*, in which the flowers are wholly golden yellow, in place of ivory-white. This variety, if constant, will be a very desirable acquisition, and this species and its varieties will doubtless bring the genus Catasetum again into popularity.

Our figure was taken from a very fine and well-grown plant in the rich collection of Orchids grown by Thomas Statter, Esq., Stand Hall, Whitefield, near Manchester. The plant in question bore three spikes, each nearly fifteen inches long, one of which bore a raceme of eight flowers measuring some three inches across, and the other two spikes bore a raceme of seven flowers each, equally large, and we regret that space would not allow us to render more justice to this beautiful specimen.

Catasetum Bungerothii, like all the other members of the genus, is a deciduous plant; it sheds its foliage when growth is mature, after which it should have a decided period of rest. The spike is produced from the side of the stem near its base, shortly before the growth is finished, so that the flowers have the advantage of being accompanied by their own leaves, which are preferable to the employment of substitutes in the shape of Ferns and foliage plants. The spike attains to a length of about fifteen inches, bearing a two-ranked raceme of large and beautiful flowers, which are pure ivory-white, save the hollow cavity of the spur, which is rich orange; the column is also stained with a pale shade of the same colour, the lip being deeply concave.

This plant bloomed in the month of August, but we have seen other examples flowering at an earlier period in the year, and also later. The flowers being thick and fleshy in texture, they remain in full beauty for a considerable time if kept free from damp.

Catasetums require to be grown vigorously, by which means large and well-developed bulbs are obtained; when growth is finished the water supply should be gradually reduced, so that by the time all the leaves have fallen it may cease entirely, the fleshy pseudo-bulb enabling them to withstand the drought of the resting season with impunity; however, should the bulbs show the least sign of shrivelling it may be taken for granted that a little moisture will be both welcome and necessary.

This plant should not be removed to any out of the way corner during the resting season, but should be still kept well exposed to sun and light: we attribute the great loss which frequently occurs amongst deciduous plants to their being so removed and forgotten. They enjoy strong heat when growing, and thus they succeed well grown either in the East India house or in the temperature of the Cattleya house, and may be treated as pot plants, or grown in hanging baskets. Mr. Johnson, who is gardener to Mr. Statter, and has the management of this fine collection of Orchids, says he used for the potting material, in which this plant grew so exceedingly well, a mixture of fibrous peat and turfy loam, the pots being thoroughly drained. Re-potting or surfacing should be performed immediately the plants show signs of fresh growth after the resting period. At this season water must be administered carefully, and in small quantities, increasing the supply as the days lengthen and the growths strengthen.

CATTLEYA GASKELLIANA ALBA

CATTLEYA GASKELLIANA ALBA.

[Plate 353].

Native of Venezuela.

Epiphytal. *Pseudobulbs* clustered, erect, clavate, smooth when young, becoming furrowed with age, from six inches to a foot high, monophyllous and evergreen. *Leaves* oblong obtuse, coriaceous in texture, and of a rich bright green colour. *Scape* issuing from between a narrowly oblong sheath, two, or more flowered. *Flowers* large and pure white, saving the throat, which is pale yellow, the anterior lobe of the *lip* being prettily frilled round the margin.

Cattleya Gaskelliana alba, *supra*.

We have much pleasure in introducing to our subscribers one of the most beautiful forms of the very variable *Cattleya Gaskelliana*, its white flowers being a great acquisition in the genus to which it belongs; it is quite distinct from the typical plant, and from every other white-flowered Cattleya. The species is named in honour of Holbrook Gaskell, Esq., of Woolton, near Liverpool, the possessor of a very fine collection of orchidaceous plants. Since this species was first discovered, numerous large importations have come to hand, from amongst which many fine forms have appeared. Indeed, it appears to be extremely variable in the colour of its flowers, so much so that no two plants are exactly alike; this variability is especially welcome, as it naturally blooms at a season when Orchid flowers of all kinds are scarce. It is a free-growing and a profuse-blooming kind, and we hope shortly to be enabled to figure the typical plant in these pages. The plate before us was taken from an extremely fine plant, grown in the collection of R. H. Measures, Esq., the Woodlands, Streatham.

Cattleya Gaskelliana alba is a new and grand variety; it is compact in habit of growth, and the colour is a lively green. The flowers are large, and wholly pure white, saving the yellow in its throat, which affords a pleasing contrast with its pure white sepals and petals. It blooms during the months of July and August, and continues in full beauty some three or four weeks, that is if the flowers are kept from damp; great attention should be given to this, as white flowers are so easily disfigured if allowed to become damp. Moisture should not be distributed in the house where Orchids in flower are arranged, at any time when the temperature is low. We frequently see and hear of Orchid growers embellishing their

houses with rockwork, over and about which water is allowed to continually trickle; this, of course, maintains a thoroughly moist atmosphere, excellent for the period of growth if the necessary heat is maintained, but these houses are frequently kept at a very low temperature, and the consequence of this is quickly to be seen if any blooming plants are there, as the flowers rapidly become spotted and decay. This is a great source of annoyance, for after a year's labour and care, one should be enabled to enjoy their flowers as long as possible, always bearing in mind the great strain the process of blooming is to the plant. This is a subject far too imperfectly understood by Orchid growers, and we wish specially to draw the attention of our subscribers to the necessity of a careful study of the question.

Cattleya Gaskelliana alba requires the same treatment as *C. Mossiæ*, *C. Mendelii*, and others of the labiata section, but as it flowers upon the young growths immediately after they are mature, no resting period is necessary in the summer time. After flowering, the plant commences to grow, and during this time it should be well exposed to the light, as there is little fear that our winter's sun and light can be too strong for it; during the hotter part of the summer season it requires shading from the sun's rays, in order to maintain the foliage of a healthy colour. It succeeds well in either a pot or hanging basket, but whichever system is adopted, good drainage must be secured. The soil should be good peat-fibre and living sphagnum moss.

Vanda Lowii.—We have received from Mr. Laing, gardener to Mrs. Nelson, Salisbury Green, Edinburgh, a fine spike containing thirty-two flowers of this noble Orchid, which is perhaps more correctly named *Renanthera Lowii*; the plant from which it was taken is only fifteen inches high and bore two spikes of flowers. We never remember to have seen this species flower in such a small state before, and great credit is due to Mr. Laing for his management of the plant.—B. S. W.

CALANTHE MASUCA

CALANTHE MASUCA.

[Plate 354.]

Native of Nepal and Sikkim.

Terrestrial. *Leaves* large, oblong-lanceolate, tapering below, acuminate, much plaited, and deep green. *Scape* erect, larger than the leaves, terete, glabrous, and bearing on the summit a many-flowered raceme of beautiful purple flowers. *Bracts* large and membraneous. *Sepals* and *petals* nearly equal, oblong-acuminate, spreading, violet-purple, passing into lilac with age; *lip* three-lobed, rich violet-purple, lateral lobes sub-falcate, middle lobe sub-cuneate, the base prolonged into a long spur, and bifid at the apex; the disc of the lip bears a five-crested tubercle, and the crests are furrowed transversely.

Calanthe masuca, *Lindley, Botanical Register*, t. 37; *Botanical Magazine*, t. 4541; *Wight's Icones Plantarum Indiæ Orientalis*, iii., t. 918.; *Lemaire's Jardin Fleuriste*, t. 62; *Moore's Illustrations of Orchidaceous Plants*, t. 2; *Bateman's Second Century of Orchidaceous Plants*, t. 139; *Williams' Orchid Grower's Manual*, 6 ed., p. 162.

This is one of the evergreen terrestrial Calanthes which has been in cultivation nearly fifty years, having first flowered in this country in 1842, in the nurseries of the late Messrs. Rollisson, at Tooting. The species of this section are somewhat numerous, and, at the same time, when in flower, their long erect spikes of bloom render them very attractive. Many of these evergreen species have been introduced for a very long time, and although in the early days of Orchid culture it is said to have been "one of the most difficult of orchidaceous plants to grow well," this has never been our experience with this species. We have figured *Calanthe colorans* in the fifth volume of this work, plate 218; this is a handsome, dwarf-growing, white-flowered species. *C. Dominii* is a pretty plant with light purple flowers; it is a garden hybrid obtained in the nurseries of Messrs. James Veitch and Sons, Chelsea, and curiously enough, some time afterwards a seedling form appeared under the name of *C. Mylamii*, in the nurseries of Messrs. Rollisson and Sons, of Tooting, the latter name becoming a synonym, as it proved to be the same as the Veitchian plant. *C. veratrifolia*, a white-flowered form, is at once one of the most beautiful and useful Orchids for home decoration and for exhibition purposes, but to render it effective when used on the public exhibition table, the flowers require to be well packed, as upon the slightest bruise they turn black and become unsightly; but as it has noble foliage and very large racemes of bloom of the purest white, which remain in full perfection for a period of between three or four months,

a fine specimen is a great ornament to any collection of plants. The plant here portrayed is a grand form of the species, and was grown in the Victoria and Paradise Nurseries, at Holloway. There are numerous other varieties, but the one figured is the best that has come under our notice.

Calanthe masuca is an evergreen species, with plicate dark green leaves, which are eighteen inches in length, and six inches in breadth and have a bold and handsome appearance. The spikes attain the length of two to three feet, are produced from between the leaves, and bear on the summit a large raceme of handsome flowers. The sepals and petals are of a deep violet-purple, which with age become lighter, passing into lilac; lip, rich purple. Its blossoms are produced during the months of June, July, and August, and if kept free from cold damp, continue flowering for three months which renders it a highly important decorative Orchid.

This being an East Indian terrestrial plant, it requires to be grown in a moist tropical stove, not necessarily an Orchid house. In such a structure we have seen some of the very finest specimens grown, and by those who do not profess to grow Orchids, and the majority of these evergreen species of Calanthe thrive well under exactly the same treatment. These Calanthes should have thorough drainage, and they should be grown in pots, while the soil should consist of good turfy loam and leaf-mould, and the plants should be kept down below the rim of the pot, in the same way as ordinary stove plants are potted. They have thick and fleshy roots, and require good soil to maintain them in health, and we have found them much benefited by an occasional application of weak liquid manure during the growing season. During the summer this species requires abundance of water, but its drainage must carry it away freely, and even during the winter months, although it requires a somewhat drier atmosphere, the soil must be kept in a moist and friable condition. As soon as growth is completed, the spikes begin to appear, and it is just at this time that the stimulant is of the greatest assistance in enabling the plant to develop its spikes, and produce fine blossoms. This species, and indeed all this section, well repay any trouble and care bestowed upon them, as they yield a great quantity of bloom when grown vigorously. They all require shading during bright sunshine, or their large leaves soon become disfigured, and perfect foliage is always necessary to a good floral display.

The best time to re-pot these Calanthes is just after they have ceased blooming, as at that time they usually commence to grow; in performing this operation bear in mind the thick fleshy roots, and do not injure them more than is absolutely necessary. Shake off all the old soil, and when adding the new, some nodules of charcoal will be found to be a desirable addition. If it is thought necessary to increase the stock of plants, this is the best time to perform the operation by division.

J. Nugent Fitch del. et lith.

B. S. Williams Publ.

ODONTOGLOSSUM EUGENES.

ODONTOGLOSSUM EUGENES.

[Plate 355.]

Native of New Grenada.

Epiphytal. *Pseudobulbs* ovoid, compressed, some four inches high, smooth and deep green. *Leaves* ligulate, acute, a foot or more long. *Scape* somewhat flexuose, from a foot to two feet long, many-flowered. *Flowers* four inches across; *sepals* oblong-acute, pale yellow, blotched heavily with rich chestnut-brown; *petals* broader than the sepals, but similar in colour, differing, however, in being bordered with pale yellow with white centre, and they are also spotted with chestnut-brown; *lip* oblong-acute, serrated on the edge, crest expanded into two lobes, and terminating in two prolonged diverging teeth. *Column* white, furnished with two broad wings.

Odontoglossum eugenes, *Hort. Veitch. Manual of Orchidaceous Plants*, i., p. 73.

Odontoglossum has become both an extensive and a very important genus of the Orchidaceæ. The European travellers and plant collectors are continually sending home fresh stock, the result of their labours in various parts of the mountain regions of South America, and as it is now so well understood by growers of Orchids at home that these Odontoglots are purely mountain plants, the treatment they receive on their arrival in this country is so thoroughly congenial, that we have succeeded in enlarging the genus to a very great extent with hybrid forms, which have added considerably to the embellishment of every Orchid-house in the country. These natural hybrids have been brought about through insect agency, and the great majority of them are welcome additions to our collections Such is the case with the plant whose portrait is here given, which was introduced by Messrs. Veitch and Sons, of Chelsea, and flowered for the first time in this country in the garden of His Grace the Duke of Sutherland, at Trentham. It is a very handsome hybrid, and its parents are supposed to have been *Odontoglossum Pescatorei* and *O. triumphans*. In general habit of growth it most resembles the first-named plant, but its flowers partake more of the character of *O. triumphans*. We are heartily glad to find so many natural hybrids are being discovered in their native wilds, for notwithstanding the skill and energy of our hybridisers at home, very little success has attended their labours with this genus; but we hope soon to see this difficulty overcome, for there is doubtless a great future yet in store for the numerous admirers of the Odontoglossums. The most forward seedling Odontoglots we have yet seen are in the garden of H. J. Buchan, Esq., of Wilton House, Southampton, raised by his gardener, Mr. Osborne.

Our drawing was taken from a fine plant in the collection of His Grace the Duke of Sutherland, at Trentham, where Odontoglots are well cultivated by Mr. Blair, who has the charge of this collection, and the inflorescence on this specimen was exceedingly fine.

Odontoglossum eugenes is a magnificent evergreen plant, with bright green foliage; the inflorescence is arched, and many-flowered, producing a grand effect when the blossoms are expanded. The flowers are four inches across, and of a bright, showy, and pleasing colour; the sepals and petals are of a pale yellow, distinctly margined and tipped with deep yellow, the centre and base of the petals white, both sepals and petals being heavily blotched with chestnut-brown; lip white, with yellow crest, and a large blotch of chestnut-brown in the centre, while the column is white. This plant flowers during the months of June and July, and lasts in full perfection for six weeks. The length of time Odontoglossums retain their beauty renders the flowers of these plants so valuable; moreover we have frequently observed that the flowers of those kinds which open during the dull, heavy days of winter and early spring do not suffer from the fogs—which we often experience at that season of the year—in the manner that many other orchidaceous plants suffer, so that this is another favourable argument for the cultivation of the various members of this truly beautiful genus.

This plant requires to be treated in precisely the same manner as its supposed parents. It should be grown in a cool house, and shaded from the hottest sun in summer, but in the autumn and winter shading may be entirely dispensed with. In the spring, when the sun begins to rise high and shine powerfully, will be soon enough to think of shading the Odontoglots; but, as we have frequently remarked, these plants should never be shaded after the sun is on the decline on a summer afternoon, because we cannot in this country expose them to a greater share of light than they enjoy, and there is little doubt this thorough exposure is one of the great secrets in the successful management of Orchids. Treated in this manner the plants form fine growths, and ripen up their bulbs thoroughly, from which fine spikes may be reasonably expected, and fine spikes produce fine flowers. On the other hand, weak growths cannot be expected to produce like results, but must lead to failure and disappointment.

J.Nugent Fitch del. et lith .

B.S.Williams Publ.r

DISA RACEMOSA .

DISA RACEMOSA.

[PLATE 356.]

Native of the Cape of Good Hope.

Terrestrial, herbaceous. *Leaves* four to six, radical, spreading lanceolate-acuminate. *Scape* erect, from a foot to eighteen inches high or even more when vigorous, somewhat flexuose, clothed with numerous bracts, which are sheathing at the base, becoming smaller upwards, and appressed, terminating in a many-flowered secund raceme. The *flowers* are showy, of a rosy purple hue, and measure some three inches across; *dorsal sepal* helmet-shaped, acute, erect, gibbous at the back; *lateral sepals* plain, spreading, oblong-acute; *petals* small, obliquely oblong, incurved at the apex, and arching over the anther, of a deeper hue than the sepals; *lip* sub-filiforme, acuminate. *Column* erect, or ascending.

DISA RACEMOSA, *Linnæus, Botanical Magazine*, t. 7021. *Williams' Orchid Grower's Manual*, 6 ed., p. 626.

SATYRIUM SECUNDUM, *Thunberg.*

DISA SECUNDA, *Swtz. Sprengel Systema Vegetabilium*, iii., p. 698.

Very few species of this genus have yet been introduced to cultivation in this country, although it is a somewhat extensive family, and contains numerous bright and showy species. The genus *Disa* appears to be confined to South Africa and Abyssinia, but when the African Continent becomes more opened up to Europeans, it may be found to be more widely distributed. The various species are mostly found in cool shady places, and often in large masses on rocks by the sides of streams, and over which the moisture falls.

Some brief descriptions of a few of the showy kinds of Disas (the present species amongst the number) will be found in the sixth edition of the *Orchid Grower's Manual*, p. 626, but there are many other kinds in Africa well deserving attention, Mr. James O'Brien, of Harrow, being at present the most assiduous introducer of these plants.

Two beautiful Disas, new to cultivation, have flowered this year in the country, which gives hope for the extended cultivation of these plants—the one we now figure under Linnæus' name of *Disa racemosa*, and a blue-flowered species, *D. graminifolia*, received from Mr. Tautz, of Shepherd's Bush, and from which a plate has been prepared for publication in the *Orchid Album*, at an early date. It affords us much pleasure to introduce and bring to the notice of our subscribers the portraits of the various members of this genus, as these beautiful plants can be so very easily cultivated by all Orchid growers in a greenhouse or cool frame. What can

be more splendid than the display of *D. grandiflora*, with its large and brilliant scarlet flowers, as grown in the gardens of M. le Comte Adrien de Germiny, at Gouville, in Normandy, and described by us in the seventh volume of the *Orchid Album*, under plate 294. At that time we saw two hundred spikes bearing four hundred expanded flowers beside a quantity of buds unexpanded. That was a sight long to be remembered, but we have heard from the same gardens that this number of blooms has since been largely exceeded.

Disa racemosa is a fine and distinct species somewhat resembling *D. grandiflora* in general aspect, but of smaller habit; the leaves are light green, and its elegant blossoms are of a rosy purple hue, produced in the month of July, and measure three inches in diameter. The accompanying plate was taken from a plant in the Royal Botanic Gardens, at Kew, by the kind permission of Professor Dyer, the Director. The plant was growing freely under the care of Mr. W. Watson, who collected the plant in its native country, and from whom we have received the following interesting account of his discovery. "*Disa racemosa* is abundant in the neighbourhood of Grahamstown. I collected our plants in a deep ravine, at the bottom of which a narrow stream ran trickling over huge boulders or jutting pieces of flinty rock. The Disa grew on the moist surfaces of this rock, as well as in the soil, at the margin of the stream, and even in the driest weather this plant would be kept moist by the stream, whilst in the rainy season it would, doubtless, be often partially or entirely submerged for a time. The ravine was well wooded, so that the Disa is always shaded. In this place I found many yards of plants, growing in dense patches, and often forming a kind of turf on the surface of the stone, so that to gather it I had only to insert my fingers under the edge of the turf and tear the mass up." He says, respecting its cultivation, "We find this species easier to manage than *D. grandiflora*; it grows quickly, and sends out runners freely if treated exactly as usually answers for *D. grandiflora*. Last February we divided a clump into single pieces as an experiment simply, and every one of these grew and flowered in the following May."

J. Nugent Fitch del. et lith.

B.S. Williams Publr

CATTLEYA BICOLOR MEASURESIANA.

CATTLEYA BICOLOR MEASURESIANA.

[Plate 357.]

Native of Brazil.

An epiphyte with long and slender, erect, terete, pseudobulbs, which vary from a foot to two and a half feet in height, they are jointed and deeply striated, and furnished with numerous, deciduous, pale brown sheaths, diphyllous. The *leaves* are oblong-lanceolate, obtuse and coriaceous in texture, slightly carinate, and some six inches long, the upper side is deep green, the under side paler. *Peduncles* terminal, erect, from two to six flowered. *Flowers* about four inches across, *sepals* and *petals* spreading, the latter prettily frilled on the edges, the whole being of a bronzy green, or olive-brown; *lip* destitute of the side lobes, and thus the large column is left entirely bare, the front lobe is oblong-cuneate, slightly reflexed, with a depressed central line, broad in front and bilobed, magenta-purple, bordered with white.

Cattleya bicolor Measuresiana, *supra.*

When figuring *Cattleya bicolor* in the fourth volume of this work, plate 318, we promised to bring to the notice of our subscribers, the variety *Measuresiana*, which is a distinct and beautiful form of the species, as will be seen from our plate; in addition to its rich colour, the margin of the lip is bordered with white. This form was introduced from the same locality as the typical plant, but as few examples of it have hitherto appeared, it must be considered a rare variety. There has hitherto been very little variation in the imported plants of *C. bicolor*, in which respect it differs from the great majority of our Cattleyas, as in other species of this genus the variation in colour of the flowers is considerable; and now that *C. bicolor* has again become popular, we hope to see equal variations occur with it. This Cattleya produces its blooms at a season when there is somewhat a dearth of Orchid flowers; and this in addition to its rich colours, makes it doubly valuable. We have given under the plate previously quoted, all particulars respecting the native habitat of this plant, also full details as to its cultural requirements, to which we beg to refer the reader.

Our drawing was taken from a well-grown plant in the fine collection of R. J. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell, which is kept in excellent health by his gardener, Mr. H. Simpkins.

Cattleya bicolor Measuresiana is a beautiful evergreen variety, resembling in growth the typical plant, and its spikes of bloom are produced in the same manner, and with the exception of the white margin round the front of the lip

the colour is also very similar; but it is this white margin, which gives the flower such an elegant and distinct appearance. Its blooms are produced during the months of August, September and October, and they continue in full beauty for some three weeks or a month, if they are carefully excluded from damp. This, and indeed all the Cattleyas, when in bloom, should be kept in a warm, temperature, in which the flowers last very much longer than in a cool house, where damp is sure to rise, and cause spots speedily to appear on the blossoms, by which their beauty is at once affected.

W. Fitch del. et lith

B.S. Williams Publr

ANGRÆCUM CAUDATUM.

ANGRÆCUM CAUDATUM.

[Plate 358.]

Native of Sierra Leone.

Epiphytal. *Stem* erect, emitting from near the base numerous stout fleshy roots, and clothed with distichous sheathing leaves, which are lorate, channelled and obliquely notched at the apex, they are recurved, some ten inches in length, upwards of an inch in breadth, leathery in texture, and pale green. *Spike* axillary, pendant, flexuose, and many-flowered. *Flowers* some four inches across; *sepals* and *petals* nearly uniform, linear acuminate, spreading, of an olive-green colour; *lip* pure white, obovate, with a long claw, serrulate on the edge, with a long beak in front, produced on the base into a flexuose spur, some nine inches long, and of a ferrugineous brown, slightly notched at the end. *Column* short, erect, brown, with a long rostrum. Anther case furnished with a long beak.

Angræcum caudatum, *Lindley, Botanical Register*, 1844; *Botanical Magazine*, t. 4370; *L'Orchidophile*, 1887, p. 80; *Williams, Orchid-Growers' Manual*, 6 ed., p. 114.

Angræcum is a large African genus of Orchids, which has hitherto yielded only white flowers, although rumour records the recent arrival of a coloured species, which, however, must be seen before more can be said respecting it. Many of the kinds have but little beauty from a horticultural point of view, the plants and flowers being exceedingly small; but yet there are many kinds both beautiful and curious, whilst, perhaps, the largest flowered Orchid known, is a member of this family. Many new kinds have been discovered and introduced in a living state during the last few years, and have proved great acquisitions to our Orchid houses, their graceful spikes, and curious long-spurred flowers rendering them very distinct from other members of the order. Brief descriptions of the most desirable species and varieties may be found in the 6 ed. of the *Orchid-Growers' Manual*, p. 113. The species we here introduce to the notice of our readers, is an old inhabitant of our plant stoves, having been introduced, according to the Messrs. Loddiges, of Hackney, in 1832, and it is recorded by other authorities, in 1834; and to our own knowledge some fine specimens of this species were seen at our public exhibitions in London some thirty or forty years ago; but of late years the plant has become scarce, and very few fine examples of it could be found in even the largest collections; latterly, however, there has been some importations of this species, and we hope again to see this exceedingly interesting plant become popular. We are indebted to the kindness of Captain Vere Hopegood, of Craigieburn, Moffat, N.B.,

for the opportunity of figuring this fine species; it is a well-grown specimen, and in this collection it produces very long spikes of bloom.

Angræcum caudatum is a rare species and evergreen, it grows from a foot to eighteen inches in height; the leaves are two-ranked, lorate, channelled and emarginate, about ten inches long, and pale green in colour; it produces long racemes of flower from the axils of the leaves, these are pendant, a foot or more in length, bearing from six to twelve flowers, which are greenish yellow, tinged with brown; the lip being ovate-cuneate, tapering to a point and furnished behind with a long tail-like spur, which is some nine inches long, and of a pale olive colour. It blooms about the month of June up to September, and lasts in full beauty for several weeks.

This *Angræcum* is a native of the hot district about Sierra Leone, in Western Tropical Africa, and, therefore, it requires the temperature of the East Indian, or hottest house in our gardens, it also requires a large amount of moisture, especially during the summer months, in autumn and winter the supply must be reduced; but even during this season it should not be allowed to become dry at the roots, as it has no thick fleshy bulbs to support it. The best material to grow this plant in is living sphagnum moss, this will keep it moist and in a healthy condition, which is a point of material importance, for, if neglected, it frequently leads to the loss of the lower leaves, in this respect Angræcums resemble Ærides, and loss of foliage means loss of beauty. Angræcums are nearly always growing, and care must be exercised that the flower spikes are not allowed to injure the plant; if it appears to be impoverished, the spike or spikes should be at once cut off and placed in a glass of water, where the flowers will continue to display their beauty for a long time, especially if the water is renewed every few days. We find these plants thrive best when grown in baskets suspended from the roof, they enjoy sun and light, but must be shaded when the sun's rays are very powerful; the morning and evening sun, however, will not harm them, whilst during the autumn and winter months they should be exposed to all the sun and light it is possible to give them, this strengthens their foliage and ripens their growth, causing the plants to flower more freely. Drain well and do not use much sphagnum about the roots, these roots being mostly made in the open if the atmosphere is kept sufficiently moist.

Augene Fitch del.et lith.

COMPARETTIA FALCATA.

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COMPARETTIA FALCATA.

[Plate 359.]

Native of Peru and Columbia.

A small growing epiphyte, with smooth, slender, oblong, clustered pseudobulbs, when young enveloped in large membraneous scaly sheaths, and each bearing a single lanceolate, subfalcate leaf, which is slightly bi-lobed at the apex, channelled above, leathery in texture, and deep green. *Scape* rising from the base of the pseudobulbs, bearing small, somewhat distant bracts, which are appreased and sheathing. *Raceme* many-flowered. *Flowers* rather distant, and of a reddish crimson, suffused with purple; upper *sepal* and *petals* erect, concave, the lower sepals joined into one and spurred; *lip* obcordate, clawed, and bearing two spurs at the base, which are hidden within the spur of the lateral sepals. *Column* free, with a hemispherical anther case.

Comparettia falcata, *Pœppig et Endlicher Nova Genera et species Plantarum* i., t. 73, *Lindley*; *Botanical Magazine*, t. 4980; *Williams, Orchid-Grower's Manual*, 6 ed., p. 225.

The Comparettias are dwarf growing and beautiful plants, and the genus which comprises but a few species, are all deserving the attention of the Orchid cultivator. The one we here introduce to the notice of our readers is by no means the least beautiful of this very interesting family, which a glance at the accompanying plate will fully confirm. We have previously figured two forms of this very elegant family in *The Album*, i.e., *C. macroplectron*, in Vol. ii., plate 65. This is a charming kind, and was taken from a fine plant in the late collection of F. A. Philbrick, Esq., Q.C., Oldfield, Bickley, Kent. The second *C. speciosa*, will be found in Vol. v., plate 233, and this figure was obtained from the fine collection of Sir Trevor Lawrence, Bart., M.P., at Burford Lodge, Dorking, the flowers being of a most brilliant hue. The plants belonging to this genus are dwarf growers and require but little space for their accommodation, and amply repay for all the care bestowed upon them. They will thrive in any moderately warm house, in a shady position, and if suspended from the roof their drooping spikes of brilliantly coloured flowers form a rich contrast with the green of the foliage beneath them. Our drawing was taken from a plant growing in the Victoria and Paradise Nurseries, Upper Holloway.

Comparettia falcata is a compact growing and beautiful evergreen plant, with small dark, leathery leaves, which are some four inches long, and an inch and a half broad, the spikes proceed from the base of the small bulbs, and attain the

length of about twelve inches, the flowers are arranged in a somewhat two-ranked fashion, the colour being a lively crimson, suffused with purple. It continues blooming for a considerable time if shielded from damp, or sprinklings from the syringe.

In our former volumes we have already given our subscribers advice respecting the management of the Comparettias, and we may here state that we have nothing to add or retract from that, as we cannot find any better system for their cultivation. They may be grown either in baskets or in pans suspended from the roof where they get plenty of light but where they may be shaded from the hottest sun. They do not require much soil about their roots, but this must be kept thoroughly sweet and fresh, as stagnation of any sort about their roots will speedily end in death, therefore, let the drainage be of the freest, and the soil should consist of good fibrous peat and living sphagnum moss. Although these plants are considered somewhat delicate they may be grown successfully with care. They do not like to be disturbed, so that when doing well allow them to remain, and in renewing the peat and moss about them, pick it out carefully from amongst the roots, and replace the fresh with equal care. They require a liberal supply of water during the period of growth, and although during autumn and winter the quantity should be curtailed, they must never be allowed to become dry for any length of time, but should be kept moist, which will correspond with their surroundings in a state of nature, where, in their resting season, they enjoy the moisture from the heavy dews at night, and thus their bulbs and foliage are kept in a plump and vigorous condition; if this is not maintained under cultivation the plants will soon dwindle and die.

Comparettias are not easily propagated. We have before observed they dislike being cut or disturbed in any way; but if it is desirable to divide them, and the plants are sufficiently large to do so with safety, the best time to perform the operation is just as they are starting to grow, but the plants should be in vigorous health at the time.

These plants should be kept strictly clean. Insects should be diligently sought for and destroyed, for these small plants will soon show signs of distress. Cock-roaches and other pests must be well kept under, if not possible to entirely exterminate them. They are voracious feeders upon the roots of these plants, and every root destroyed materially weakens the plant.

ONCIDIUM JONESIANUM FLAVENS.

ONCIDIUM JONESIANUM FLAVENS.

[Plate 360.]

Native of Paraguay.

An epiphyte, with small clustered pseudobulbs, which are oblong-ovate, and monophyllus. *Leaves* pendant, elongate, subulate, slender, channelled on the upper side, tapering gradually to a point, and deep heavy green. *Spike* radical, slender, pendant, many-flowered. *Flowers* upwards of two inches across; *sepals* and *petals* spreading, more or less undulated on the margins, ground colour soft yellowish green, profusely spotted with pale yellow, and with pale green; *lip* broad, transversely reniform, narrowed behind and clawed, the blade pure white, with an undulated margin and yellow crest.

Oncidium Jonesianum flavens, *Reichenbach fil. Gardeners' Chronicle, Third Series*, IV, 1888, p. 234.

Oncidium Jonesianum is a species not known to Orchid growers of the older school, as it has been introduced from Paraguay, within the last few years, by Mr. Horsman, of Colchester; since its first arrival, however, large importations have come to Messrs. Sander & Co., of St. Albans, so that it is now widely distributed, many splendid varieties have appeared amongst the plants which have already flowered in this country, some of which are specially noteworthy, and deserving a varietal name; the one now before us is quite distinct in the colouration of its flowers, and it has, therefore, been named by Professor Reichenbach as a valuable acquisition. It is astonishing to see the great number of varieties which appear amongst a consignment of Orchids, and no doubt there are many equally beautiful forms which die in transit, which would be welcome to our collections at home. Some collectors when searching for these treasures of the Orchid world, do not see them in bloom, and are entirely ignorant of the grand varieties they may have transmitted, or have left behind, whilst another collector, more fortunate, will happen to arrive at a spot just in time to see a whole bevy of varieties in flower, and, therefore, knows exactly what he is gathering, although we do not consider the flowering season the best time for sending home all Orchids. We have already figured *O. Jonesianum* in the fourth volume of this work, plate 183, and this will give our readers an idea of the typical form of the species. Our illustration was taken from a plant which appeared for the first time in cultivation, in the well-known collection of J. Statter, Esq., Stand Hall, Whitefield, near Manchester, a collection which includes many new and rare species and varieties of Orchidaceous plants.

Oncidium Jonesianum flavens, is a distinct and rare evergreen variety resembling the species in habit of growth, and produces a many-flowered inflorescence upwards of eighteen inches long. The sepals and petals are pale yellowish green, spotted with pale green and yellow; the lip is white with yellow crests. It blooms during the months of September, October and November, and enlivens the Orchid houses with its cheerful blossoms for several weeks. We have found the most suitable manner to grow this plant is upon a block, or a raft of wood, which indeed is the most natural manner, and the natural plan succeeds best under cultivation. In this manner this beautiful Orchid displays its charms to the best advantage. The leaves grow in the manner depicted on our plate, and the flower spikes proceed from the base of the newly made growth, when the plants are suspended amongst or against plants with good foliage, to form a background, a charming and pleasing effect is produced. A few Palms and Ferns arranged with the Orchids forms a charming and enchanting picture, which deserves the attention of Orchid growers to a greater extent than they have yet given the subject.

This Oncidium, we find, enjoys more heat than was at first anticipated. We have ourselves tried it in different temperatures, and have also observed the results obtained in other collections, and from these observations we are fully convinced that want of heat has been the cause of failure in the cultivation of this plant, and the conditions under which this plant has for the most part hitherto been grown is a mistake, and that it really requires strong heat and moisture. We find the temperature of the East India house suit it admirably. The plants are suspended, and syringed every day in summer, and the roots are kept moist throughout the growing season; during rest the supply of water must be reduced. The plant has now become very reasonable in price, and we advise our readers to grow this species in quantity, more especially as but little space is necessary for its accommodation, and as its cheerful flowers appear during the autumn months—a season when Orchid blooms may be reckoned as scarcest.

J. Nugent Fitch del. et lith.

B.S. Williams Publ.

SACCOLABIUM CŒLESTE

SACCOLABIUM CŒLESTE.

[Plate 361.]

Native of Siam.

An epiphyte, with an erect habit, producing from its base numerous thick, fleshy roots, by which it adheres to the branches of the trees upon which it is found growing. It has an erect leafy stem, furnished with numerous closely set, distichous leaves, which are channelled above, carinate beneath, præmorse, unequally bilobed at the apex, and sometimes apiculate, some five or six inches long, thick and fleshy in texture, and deep green. *Scape* erect, six to nine inches high, issuing from the axils of the leaves, and bearing a dense raceme of elegant flowers. *Sepals* and *petals* spreading, almost equal, cuneate oblong, obtuse, slightly incurved, white tipped with azure-blue; *lip* rhomboid in front, emarginate, white, bearing numerous broad radiating lines of azure-blue, in some forms deep blue. *Spur* short, compressed, obtuse and recurved, blue on both sides.

Saccolabium cœleste, *Rchb. fil.*, *Gardeners' Chronicle*, n.s. xxiii., p. 692; *Williams, Orchid-Grower's Manual*, 6 ed., p. 564.

Rhynchostylis cœlestis, *Rchb. fil.*, *Gardeners' Chronicle*, n.s. xxiii., p. 692.

This charming species of *Saccolabium* is of quite recent introduction, totally distinct from any other known kind, and is a veritable gem, distinct in its habit of growth, and belonging to the section which produces erect flower spikes, this habit rendering it quite different in appearance to those kinds which produce their elegant flowers in long, dense, pendent racemes, of which such kinds as *S. guttatum*, *S. præmorsum*, *S. Blumei*, *S. giganteum*, and others are familiar examples. This species was collected and sent home in quantity by M. Röbbelin, who states that he found it growing upon isolated trees in the rice-fields of Siam, these trees being charred stumps which had survived the fires used in clearing the ground for cultivation, and many of the plants sent home by him bore out his statement, as they were growing upon partially burnt wood. Saccolabiums we consider amongst the most beautiful of the whole Orchid family, and it is with much regret we observe how little they are appreciated at the present time. In past years it was very different, and the fine specimens exhibited at our London and other flower shows were the gems of the collections, and were admired by everyone. Their neglect has been brought about by the false notion that they require extraordinary heat to grow them to perfection.

The species which we here bring to the notice of our readers is a somewhat small-growing kind, but yet stronger in growth than many of its beautiful-flowered congeners, examples of which are *S. curvifolium*, *S. ampullaceum*, *S. bellinum*, and

S. Hendersonianum, which species are figured in former volumes of this work, and all are equally beautiful in their varied and distinct colours, as well as agreeing in being close and compact in their habit of growth, consequently they do not require great space for their accommodation.

The plant here figured was grown in the Victoria and Paradise Nurseries, Upper Holloway. It was exhibited before the Floral Committee of the Royal Horticultural Society, in July of last year (1888), and was by them awarded a First Class Certificate. As in all seedlings, there is a considerable diversity in the colour of this species, some plants producing flowers tipped with pale azure-blue, whilst others are much deeper in colour, but the present example is the richest and deepest blue form that has hitherto come under our notice.

Saccolabium cæleste is a new and lovely species, evergreen, and compact in growth, with foliage six inches long. The plant attains to a foot or more in height, and is slow in growing to this size. The inflorescence proceeds from the axils of the leaves on either side of the stem, and the spike is erect, some six or nine inches in height, the raceme being dense. The blunt cuneate-oblong sepals and petals are tipped with sky-blue, and the compressed blunt recurved spur has a blue tint on both sides of the centre; the interior part is also sky-blue, while two falcate, subulate bodies rise from the apex inside the spur. The blooming season is July and August, and the plant continues in full beauty between three and four weeks, if kept in a fairly warm house, and the flowers shielded from the effects of damp.

This plant requires the temperature of the East India-house to maintain it in proper condition, and should be grown in sphagnum moss, with ample drainage. It is of slow growth, and requires a considerable time to attain to the dimensions of a specimen, nevertheless when strong it produces lateral growths, which, as they increase in size, tend to make the plant compact and dense, whilst as its young shoots produce flowers in abundance, it cannot be ranked as a shy bloomer. From the natural habitat of the plant it probably will occur to growers in this country that it requires strong heat, an abundance of atmospheric moisture, plenty of sun as well as light and air; yet it will be found advantageous to shade it from the hottest sun in this country, as being beneath glass, the foliage is apt to become yellow, or burnt, which would not occur in the open air. As before remarked, this species during its period of growth requires an abundance of water, and even when at rest it should be kept free from drought. We find Saccolabiums succeed best as basket plants, suspended near the roof, and yet not too near the glass during the cold nights, as the leaves are apt to become yellow, and in this case the beauty of the plant is much diminished, as nothing detracts more from the appearance of a plant as yellow and brown foliage.

Insects are not very troublesome, yet the white scale sometimes makes its appearance, which should be at once removed, or otherwise they will speedily cause the foliage to assume an unhealthy hue, to the great detriment of the health of the plant.

Flowers Pinx. del. et lith.

B.S.Williams Pub.r

CATTLEYA MASSAIANA

CATTLEYA MASSAIANA.

[Plate 362.]

Native of Antioquia, U.S. Colombia.

Epiphytal. *Pseudobulbs* clavate, fusiform, monophyllous. *Leaves* oblong, obtuse, emarginate at the apex, some ten inches long, and upwards of two inches broad, thick and coriaceous in texture, and deep green. *Scape* issuing from a somewhat small sheath on the apex of the bulb, bearing several flowers, which are seven or more inches in diameter, and richly perfumed; *sepals* about four inches long and two inches broad, recurved at the tips, in colour a bright rosy mauve, paler towards the base; *petals* somewhat ovate, upper part contracted, afterwards spreading and undulated (this contraction is not, however, a fixed character), bright rose-colour, mottled and flushed with white towards the base; *lip* subpandurate, some two-and-a-half inches across, rolled over the column at the base, very deeply bi-lobed in front, and deeply lobed and frilled on the edge, anterior lobe rich magenta-crimson, the throat striped in the centre to the base with brownish crimson on a yellow ground, and bearing on each side a very large bright orange-yellow eye-like spot, the upper edge bordered with magenta-crimson. *Column* short, obtuse, included.

Cattleya Massaiana, *supra*.

We have figured many Cattleyas in the pages of this work, and amongst them have appeared some most beautiful species, varieties, and hybrid forms; of these one in particular, named *Cattleya Hardyana*, is especially noteworthy. It belongs to the Gigas section, and is a supposed natural hybrid between *C. Dowiana aurea* and *C. gigas*, as these two plants are found growing in the same district in the State of Antioquia in U.S. Colombia, and at the present time it still remains one of our rarest cultivated Cattleyas. The plant we here depict is equally fine in general contour, and at the same time thoroughly distinct, and even richer in colour. It is also a supposed natural hybrid from the two plants above named, and it partakes in a marked manner of the characters of the two parents, both in the colouring of its splendid flowers, as well as its habit of growth. These forms have only been found of late years, having been imported unawares, and sold as *C. gigas*, a plant originally found by the collector Warscewicz somewhere about the year 1848; but these plants did not long survive their arrival in this country, and its flowers were never seen. It was more recently introduced by M. Linden, of Brussels, but the late Mr. B. Roezl was the fortunate individual to introduce it in quantity some eighteen years ago; and we well remember first seeing this lovely Cattleya in flower, at which time there were but a few plants alive in Europe, but now it is imported in large quantities, which upon flowering are found to vary consider-

ably, thus rendering them doubly valuable, especially when such splendid hybrid forms as *C. Hardyana* and the subject of our present illustration appear amongst them. We are indebted to the kindness of M. le Duc de Massa, Château de Franconville, par Luzarches, France (in whose honour we have the pleasure of dedicating the plant), for the subject of our drawing, which was showing a flower-sheath during our last visit to this fine place in June last, 1888. We found the collection of Orchids in excellent condition, and the number of species and varieties appear to be rapidly increasing.

Cattleya Massaiana is a splendid evergreen form, which resembles *C. gigas* in habit of growth. Its flowers are produced from the newly made bulbs just before they are fully developed, several flowers appearing together upon the spike. The sepals and petals are similar in form to *C. Dowiana aurea*, and are rose-colour, beautifully mottled with white, and flushed with white towards the base; lip large, two-and-a-half inches across, enclosing the column at the base, the edge beautifully frilled and lobed, the colour being rich magenta-crimson; the throat is striped in the centre with brownish crimson on a yellow ground, and bears at the side two large eye-like spots of bright orange-yellow; the convolute portion of the lip is streaked on the outside in a similar manner to *C. Dowiana aurea*, whilst it yields a perfume similar to *C. Dowiana* itself. It blossoms during the months of August and September, but doubtless it will vary according to its season of growth, in like manner as do both of the supposed parents.

This Cattleya requires the same treatment as *C. gigas*, *C. Dowiana*, and *C. Dowiana aurea*, but we have never seen these plants grown in better style, or flower so freely than is the case at the Duc de Massa's, under the superintendence of M. Talluè, the Duke's gardener. At the time of our visit nearly every plant of these kinds in the collection were showing their sheaths, giving great promise for a magnificent display of flower in a short time. The plants were growing in a very light house, near the glass; they were allowed a decided season of rest, but receiving just sufficient moisture to keep their bulbs and foliage in a plump condition—thus affording the same sustenance as the dews, in their dry season, in a state of nature. This system, indeed, will be found to suit all Cattleyas, for although a decided season of rest is highly beneficial, the bulbs should never be allowed to shrivel. In the growing season these plants are subjected to heavy rains, but under cultivation the supply of water must be regulated with care.

J. Nugent Fitch del. et lith.

B.S. Williams Publ!

BURLINGTONIA FRAGRANS.

BURLINGTONIA FRAGRANS.

[Plate 363.]

Native of Brazil.

A small-growing epiphyte, with ovate, dark green pseudobulbs, which are slightly compressed, smooth when young, becoming wrinkled with age, and bearing on the apex a single oblong-lanceolate, obtuse leaf, slightly channelled above, carinate beneath, leathery in texture, and deep green. *Spike* issuing from the base of the pseudobulb, and bearing a nodding raceme of deliciously sweet flowers, having the fragrance of Jonquils, or of White-thorn. *Sepals* and *petals* nearly equal, projecting forward in the plane of the lip; *lip* parallel with the column, deeply bi-lobed in front, serrate at the edge, and bearing a broad band of yellow along the centre. The *raceme* is from five to eight-flowered.

Burlingtonia fragrans, *Lindley Botanical Register*, xxiii., under t. 1927. *Orchidophile*, 1884, p. 297, with Photo; *Williams, Orchid-Grower's Manual*, 6 ed., p. 158.

Burlingtonia is a small family of orchidaceous plants, yet containing some pretty dwarf-growing kinds. The genus was established by Lindley about fifty years ago, in honour of the late amiable and accomplished Countess of Burlington, who died in 1840. The species we here figure is one of the most beautiful. In the wild state it grows upon the topmost branches of the Cedrela trees in Brazil (the native Cedar), and when in bloom it fills the forest with its delightful odour, which Dr. Lindley compares to that of Jonquils, but which to us favours of the blossoms of the White-thorn. This plant is imported from Brazil in quantity, and it can be purchased at a reasonable price. On account of its dwarf habit it can be grown by anyone, even with very little space at their command, yet it has never become so popular with Orchid growers as the delightful perfume of its blossoms should have caused it to be. We have already figured—in the first volume of the Album, t. 18—*B. candida*, another of the best, and a most beautiful member of this small family. This also has white flowers, which are freely produced, but it lacks the delicious odour yielded by the flowers of *B. fragrans*.

The drawing for the accompanying plate was taken by our artist from a specimen growing in the Victoria and Paradise Nurseries, Upper Holloway, where the plant is grown in quantity, specially for cut flowers, a large demand existing for them in the shape of coat-flowers, shoulder-sprays, sprays for ladies' hair, and various other purposes of personal adornment.

Burlingtonia fragrans is a dwarf-growing evergreen species, with small ovate pseudobulbs, and dark green leaves, which vary from four to six inches in length. The spike is produced from the axils of the leaves, erect at first, afterwards

nodding with the weight of the flowers. The raceme is six to eight-flowered, these being arranged in a two-ranked fashion. The whole flower is snow-white, saving a streak of yellow on the centre of the lip. It blooms during the months of April, May, and June, and continues in perfection for fully three weeks. This species, like all the Burlingtonias, is not difficult to maintain in vigorous health if just the necessary care is bestowed upon it. It thrives well upon a block of wood, or in small baskets or pans; these should be drained well, and a very small quantity of potting material should be used, as the plants thrive best when their thin, white, wiry roots can escape from the basket or pan, and hang freely in the air. It enjoys an abundance of light, and should be suspended from the roof, some eighteen inches from the glass; in this position, during the hottest days in summer, slight shading will be necessary, but during the autumn and winter months it will require all the sun that shines. We find the temperature of the Cattleya-house suits this species admirably, with an abundance of moisture in the atmosphere during the growing season; in the resting season its roots must be kept moist, for its small bulbs and leaves, if once allowed to shrivel, do not readily swell up again; indeed, the same rule applies to all those kinds of Orchids with small bulbs.

Burlingtonias thrive best when undisturbed, but if it is absolutely necessary to increase this plant, it may be effected by division, choosing a vigorous subject for the purpose, just before growth commences. White scale is apt to infest this plant, which secretes itself in the sheathing bases of the leaves; these insects must be eradicated whenever seen, as they rapidly cause the plant to assume a sickly hue, and cast off its leaves.

ONCIDIUM ANTHROCRENE.—We have received from W. L. Barclay, Esq., The Briars, Reigate, a very fine flower spike of *Oncidium anthrocrene*; it measured three feet six inches in length, and bore thirty-five blossoms, all well expanded, its rich colours producing a fine appearance. This rarity is well grown by Mr. Bailey, the gardener in charge of the collection, and judging by its appearance it is a plant which remains in full beauty for a considerable time. The sepals and petals are chestnut-brown, transversely barred with yellow; lip pale yellow. Our artist has sketched this very rare species, preparatory to our publishing a coloured illustration in the ORCHID ALBUM for the benefit of those of our readers who may not be acquainted with its beauty. The plant is a native of Peru, and is one of the cool species, which deserves the attention of all growers of this section.—B. S. W.

J. Nugent Fitch del. et lith.

Bl. Flower imp.

MILTONIA SPECTABILIS MORELIANA.

MILTONIA SPECTABILIS MORELIANA.

[Plate 364.]

Native of Brazil.

Epiphytal. *Rhizome* creeping. *Pseudobulbs* compressed, bearing upon the apex a pair of oblong acute leaves. *Peduncle* two-edged, furnished with numerous, large, carinate bracts. *Flowers* solitary—rarely two-flowered—each measuring from four to four-and-a-half inches across; *sepals* and *petals* spreading, nearly equal, oblong-acute, both of an intense deep purple; *lip* broadly obovate, slightly unguiculate at the base, and undulated at the edge: the colour is rich deep rose, longitudinally veined with lines of rosy purple, and bearing at the base three thin raised plates or ridges. *Column* short, white, bearing two wings of a purple hue. *Anther* naked, containing two pollen masses, which are of a waxy consistency, furrowed behind, with an obovate caudicle, and oblong gland.

Miltonia spectabilis Moreliana, *Henfrey, Gardeners' Magazine of Botany*, iii. 41; *Lindley, Folia Orchidacea, art. Miltonia*, i.; *Reichenbach fil., Xenia Orchidacea*, i., 130; *Warner's Select Orchidaceous Plants*, i., t. 32; *Jennings' Orchids*, t. 37; *Moore's Illustrations of Orchidaceous Plants, Miltonia*, t. 1.; *Floral Magazine*, Second Series, t. 143; *Flore des Serres*, t, 1008; *Garden*, 1887, t. 593; *Williams, Orchid-Grower's Manual*, 6 ed., p. 413; *Lindenia*, iii., t. 105.

Miltonia spectabilis purpurea-violacea, *Botanical Magazine*, t. 4425.

Miltonia Moreliana, *Hort.*

Oncidium spectabile Moreliana, *Reichenbach fil., Walper's Annales Botanices Systematicæ*, vi., 759.

Miltonia is a very beautiful genus of Orchids, the members of which are, for the most part, natives of Brazil; and the variety we here figure is one of the most beautiful in the family. The genus was established by Lindley upon *M. spectabilis*, of which the plant now in question is considered but a variety. The name was given in honour of Viscount Milton, who at that time was an extensive grower of, and paid special attention to this particular order of plants. *M. spectabilis* is a grand old Brazilian species, which has been in cultivation upwards of fifty years, and many years ago specimens some two and three feet across were to be seen in our public exhibitions and in our plant houses, bearing a profusion of flowers, and that too at a season of the year when Orchid flowers were somewhat scarce; but at the present time Orchid flowers may be maintained in a continued succession the whole year round. Many of the fine old specimens of this plant were grown in former days with ordinary warm-house plants in the stove.

The subject we have before us is a beautiful variety of *Miltonia spectabilis*, from which it differs only in the colours of its flowers. It is most distinct and showy, and of just that hue which is rare amongst this order of plants, and

such unusual tints are found so extremely useful in arranging and contrasting a collection of orchidaceous plants in bloom. We consider this Miltonia one of the most charming Orchids in cultivation, whilst it grows freely and flowers profusely. It varies considerably both in size and colour, the form here figured we consider the best; but it still remains somewhat rare, notwithstanding the vast quantities of plants which come to this country from Brazil annually. The plant here represented was kindly sent to us from the collection of J. S. Bannatyne, Esq., Summerville, Limerick, where, under the care of Mr. Dumper, there are numerous fine and also many rare plants.

Miltonia spectabilis Moreliana is a splendid evergreen variety bearing pale green foliage, which is very apt to assume a decided yellow hue if improperly exposed to the full rays of the sun. The bulbs are about three inches high with leaves some six to nine inches in length. The scape rises from the side of the compressed bulb, and is usually from eight to ten inches long, rarely bearing more than a solitary flower. The sepals and petals are nearly uniform, spreading, rich deep purple in colour, and the large obovate lip is beautiful rich deep rose, veined with mauve-purple. The flowering season is September and October, and the blossoms last in full beauty for six weeks or more; these, when cut and placed in water, or in wet sand, continue in a fresh state for a considerable time. The cultivation of this plant is very easy, if its wants are carefully supplied. *M. spectabilis* and *M. spectabilis Moreliana* succeed under the same treatment, as they necessarily would, being found in the same localities in a state of nature, growing on the branches of trees, where they get partial shade, but the full benefit of light and air. Their creeping stems spread rapidly in the rainy season, which is their time of growth and flower. After the flowers are past the dry season follows, but even at this time there is a considerable amount of moisture rising during the night, and they also derive nourishment from the decaying leaves that fall amongst them. We find them succeed well in baskets or in pans, as their creeping stems require a large amount of surface room. They require good drainage, but not a large amount of soil, as they do not root deeply, the best material being rough peat fibre and living sphagnum moss; and the proper time to re-pot or re-basket them is in spring, just as they begin to start into growth. The warmest end of the Cattleya-house, or the cool end of the East India-house will supply them best with the necessary heat, and the baskets should be suspended near the roof-glass in such a position that the plants can be shaded from the sun during the hotter part of the day. They require a liberal supply of water to the roots, and an atmosphere well charged with moisture during the period of active growth.

White scale appears to be one of their natural enemies, as it is frequently imported with them, and if not eradicated thrives apace, to the great detriment of the plants. It is therefore essential to keep these—and all other insects—from injuring them in health and appearance.

CYPRIPEDIUM WILLIAMSIANUM

CYPRIPEDIUM WILLIAMSIANUM.

[Plate 365.]

Garden Hybrid.

A terrestrial plant, with distichous *leaves*, which are faintly tessellated. It is the result of crossing *Cypripedium villosum* with *C. Harrisianum*. The *scape* is erect, about eight inches high, clothed with short light-brown hairs, bearing a single flower, upwards of five inches across. *Dorsal sepal* very large, oblong-ovate, acute, white, the parallel nerves deep green, bearing a central, dark blackish-brown bar; *lower sepals* fused together, small, similarly coloured to the dorsal one; *petals* oblong-ligulate, acute, ciliate on both edges, bearing numerous small black dots near the base, which are arranged in lines, the upper half of the petal being of a reddish brown hue, the lower half white, suffused with a coppery tint, the nerves green throughout, but becoming nearly obsolete in the upper part; *lip* similar to that of *C. villosum*, large and full, upwards of two inches long, yellowish beneath, light brown above, with an ochre-coloured border. *Staminode* copper colour, hirsute, with a few green nerves.

Cypripedium Williamsianum, *Reichenbach fil.*; *Gardeners' Chronicle*, xvii., 1882, p. 218; *Williams, Orchid-Grower's Manual*, 6 ed., p. 262.

This form of Lady's Slipper Orchid is one of the many hybrids which have been obtained from seed in this country. We received it with several other seedlings from Mr. R. Warner, of Broomfield, Chelmsford, some of which kinds have already been figured in previous volumes of the Album. The plant in question was placed in commerce by ourselves a few years ago. It is the result of a cross between *Cypripedium villosum* and *C. Harrisianum*, and singularly partakes of the characters of both parents in a marked degree. Professor Reichenbach in describing it expressed his opinion upon this plant, in which he states it is one of the best crosses obtained by Mr. Warner. The prevailing popular taste for this genus is still increasing, and we think deservedly so, for those possessing a good collection of these plants can be assured of a display of flowers for every day in the year. These plants are easily fertilised, they grow freely from seed, and they take but a few years to arrive at a flowering state; and these facts combined have induced numbers to join in the exceedingly interesting pursuit of hybridising. The very beautiful hybrid forms which have from time to time crowned these labours, add a fresh stimulus to the operation, until it now becomes necessary that raisers of hybrids should exercise a little care over their progeny, and if a seedling appears with flowers which exhibit no improvement on the parents, it should be destroyed, and not named and launched upon the commercial world simply because of its being a seedling; if this is followed out there will be

no fear of a diminution in the numbers of Cypripedium lovers and growers, as these plants possess all the attractions to induce people of taste to commence their culture.

The majority of Cypripediums grow freely and flower profusely, whilst their blooms last in full beauty for a long time, some six weeks or two months, or more. The plants do not occupy much space, unless grown into extra large specimens, and they are easily increased by division, so that they may be looked upon as the veritable *multum in parvo* of the Orchid world.

Our plate was prepared from a plant growing in the Victoria and Paradise Nurseries, but we must acknowledge we have seen it in better condition, as the flowers become larger when the plant is strong and vigorous, but when it is often cut and divided, as our plants naturally would be for stock purposes, it has the effect of reducing the size of the pouch-like lip.

Cypripedium Williamsianum is a distinct hybrid with tessellated leaves; it is free in habit of growth, as well as in the production of flowers. The scape is some eight inches high, clothed with a profusion of short light brown hairs, and bears on the apex a single flower, which measures upwards of five inches across. Dorsal sepal oblong-acute, large, white, with prominent green nerves, and a blackish brown central band; petals oblong-acute, ciliate on both edges, and bearing numerous black dots, arranged in lines near the base, a small, dark, reddish-brown, median line along the upper side, and white with a coppery tint on the lower half; the veins are green, most conspicuous on the inferior portion; lip yellowish beneath, light brown above, with an ochre-coloured border. It blooms during the months of February and March, and continues for upwards of six weeks in perfection without any ill effects to the plant.

This plant will thrive in a lower temperature than its parents, as we find the heat of the Cattleya house best suited to its requirements. It grows well in a mixture of rough fibrous peat and turfy loam, in about equal proportions. Cypripediums all require thorough drainage, and they also require to be kept moist at the roots at all seasons of the year, in order to maintain them in vigorous health; during active growth a liberal supply is necessary, and as it is a free-rooting variety a slight syringing overhead in summer will be highly beneficial, at which time also shading will be necessary when the sun is powerful.

ODONTOGLOSSUM HARRYANUM

ODONTOGLOSSUM HARRYANUM.

[Plate 366.]

Native of the United States of Colombia.

Epiphytal. *Pseudobulbs* oblong-ovate, compressed, smooth when young, becoming ribbed and furrowed with age, attaining a height of some three inches or more, and pale green. *Leaves* in pairs, oblong obtuse, from six inches to a foot in length, somewhat coriaceous, and, like the pseudobulbs, of a pale green hue. *Scape* erect, three or more feet high, many-flowered. *Flowers* between three and five inches across; *sepals* elliptic-oblong, broader than the petals, spreading, deep chestnut-brown or chocolate, transversely streaked and bordered with rich yellow or greenish yellow; *petals* oblong, incurved, ground colour deep chestnut-brown or chocolate, longitudinally streaked in the basal half with purplish mauve, and margined with yellow; *lip* large, oblong-oval, three-lobed, lateral lobes curved upwards, ground colour white, heavily streaked with feathery lines of bluish purple, the crest being much fringed and rich deep yellow, anterior lobe somewhat cordate, pure white, which however soon changes to dull yellow. *Column* terete, furnished with two small toothed wings at the point.

Odontoglossum Harryanum, *Reichenbach fil.*, *Gardeners' Chronicle*, n.s., xxvi., 1886, p. 486; *The Garden*, xxxiii., t. 633; *Reichenbachia*, ii., t. 49.

Odontoglossum Harryanum is an extraordinary species, one which was unknown to the Orchid growers of Europe until the year 1886, having at that time been introduced by Rodriguez Pautocha, who sent it to Messrs. Horsman and Co., nurserymen, Colchester, where it first put forth its blossoms, to the great surprise of its owners. The stock, which was small, passed into the hands of Messrs. Veitch and Sons, of Chelsea, and it was dedicated to the head of that firm by Professor Reichenbach, who remarked that "it is a fresh type, a grand and unexpected surprise." A short time after this event, however, large importations of this plant arrived in England through Messrs. Sander and Co., of St. Albans, and others, which, having arrived in excellent order, soon became distributed through the country, and as it is a very free grower, it necessarily became plentiful, and now at the present time it is sold at a cheap rate; notwithstanding this, its local habitat has never been disclosed to the public. The flowers vary much in colour and size, upon different plants, but it has not been established long enough to equal the imported growths, the old flower spikes of which, on the imported plants, were between two and three feet long, showing the scars of from fifteen to eighteen flowers, so that up to the present time we have not seen this species in all its grandeur. It would appear to be a local species, and many of the collectors who have been assiduously hunting the mountain regions of the United States of Colombia, for new Orchids, are credited

with having passed near the particular spot on several occasions. There is little doubt but that it naturally grows upon trees in its native habitat, and we surmise that it grows at a lower altitude than the majority of the species, and consequently in a warmer climate than most of the Odontoglossums that are established in our plant houses. It is a robust-growing plant, and a free bloomer; but we opine that it will never become so useful as many of the grand forms of this genus which we have had longer in cultivation. The portrait we here produce was taken from a plant grown in the well-known collection of R. H. Measures, Esq., The Woodlands, Streatham, where several extra fine varieties of this plant have flowered.

Odontoglossum Harryanum is a distinct and fine evergreen species, bearing bright, light green foliage; it attains to a height of from eight inches to a foot, the pseudobulbs being about three inches high, and light green in colour, becoming ribbed with age. The scape is produced from the side of the bulb after growth is matured, it is erect, and judging by the imported plant, reaches from two to three feet in height, and bears a raceme of flowers which individually measure between three and five inches across. Sepals dark chestnut-brown, barred with greenish yellow towards the base; the petals also are chestnut-brown, striped longitudinally with white and purple and margined with yellow; lip profusely streaked with mauve-purple at the base, the cordate front lobe white, which with age passes into yellow; crest bright yellow. It blooms at different seasons of the year, according to the time its growth is matured, and it continues in beauty for a considerable time. We have tried various methods of growing this plant, and have arrived at the conclusion that the temperature of the Cattleya house is the most suitable to its requirements; indeed, we imagine it should be treated in the same manner as *O. hastilabium*, a species which *O. Harryanum* much resembles in its growth. The potting material should be good fibrous peat and sphagnum moss, the plant well elevated on a cone-like mound above the pot, and the pot must be well drained. During the summer season it requires a liberal supply of moisture to the roots, and when growth is finished it must not be allowed to suffer from drought; but just sufficient moisture is necessary to keep the bulbs and leaves in a plump and healthy condition. Shade is necessary during the summer months when the sun is powerful; but it requires all the sun and light it can possibly obtain during autumn and winter.

ANSELLIA AFRICANA.

ANSELLIA AFRICANA.

[Plate 367.]

Native of Western Tropical Africa.

A sub-terrestrial plant, growing in dense tufts, and producing tall, terete pseudo-bulbs, which are stem-like and leafy, attaining to three or four feet in height. *Leaves* some twelve inches or more long, and nearly two inches broad, lanceolate, plaited, somewhat coriaceous in texture, and deep green on the upper side, paler beneath. *Panicle* terminal, drooping, much-branched, and many-flowered. *Sepals* and *petals* spreading, the latter much the broader, slightly incurved, oblong, obtuse, ground colour yellow, spotted on the inside with irregular blotches of rich dark brownish purple, which are more indistinct on the outside; *lip* oblong, three-lobed, anterior lobe ovate, recurved at the point, rich yellow, bearing on the disc a pair of elevated ridges, lateral lobes erect, rounded, streaked within, with longitudinal bands of dull purple. *Column* semi-terete, spreading upwards, yellow, spotted more or less with dull purple.

Ansellia Africana, *Lindley, Botanical Register*, 1844, t. 12; *Id.*, 1845, t. 30; *Botanical Magazine, t.* 4965; *Reichenbach fil., in Linnæa*, v., t. 20, p. 673; *Gartenflora*, t. 95; *Paxton's Magazine of Botany*, xiii., 241, with tab.; *Williams, Orchid-Growers' Manual*, 6 ed., p. 134.

The genus we here introduce to the notice of our readers is a very small one, and we consider the species here figured is the best which has yet been introduced to cultivation, be they species or varieties. It has been objected to on account of its height; but it is this tall character which gives it such a tropical appearance, and renders it, when well grown, a noble plant, fit to grace any collection of Orchids with its presence. It has been an inhabitant of our plant houses for many years, being discovered in 1840 by our old and intimate acquaintance, John Ansell, who accompanied the first Niger Expedition, and found this plant in Fernando Po, growing on the stem of a Palm tree, which Palm is the *Elæis guineensis*, now so well known as the source of the "Palm Oil"; since which time the *Ansellia* has also been found on the opposite coast of the mainland of Western Africa. Dr. Lindley remarked of it at that time, "It is a noble plant of considerable size, bearing a long gracefully drooping panicle of large flowers." The learned doctor (in whom we had the greatest English authority on Orchidaceous plants) dedicated this plant to the memory of Mr. Ansell, by the name of *Ansellia*, and it at once became a popular plant; and many fine specimens were to be found in our stoves years ago. Now, however, it is seldom met with, so many new Orchids appearing from time to time, that the older kinds are too often crowded out and forgotten; but we trust this plant will come to the front

again, as it gives a distinct appearance to the Orchid-house or stove, where in mid-winter it produces such an abundance of flowers. We are indebted to the kindness of F. G. Tautz, Esq., Studley House, Shepherd's Bush, for our plate, in whose well-known collection this plant flowered last season, at which time our drawing was taken.

Ansellia Africana is a noble evergreen plant, producing erect stem-like pseudo-bulbs, which grow from three to four or more feet high; the foliage is light green, and strongly ribbed, the ribs being specially prominent on the underside; and when grown it presents a bold, Palm-like appearance. The panicle is produced from the apex of the stem, it is drooping, much branched, oftentimes bearing as many as a hundred flowers, which have a grand and striking appearance. The sepals and petals are yellow, transversely blotched and spotted all over with dark brown; the lip yellow. It blooms during the autumn and winter, and continues in perfection for about two months.

This plant is easily grown into a large specimen, but it requires ample pot room, as it is free in rooting, as well as being strong and robust in growth. The material we have found to suit it best is rough peat and good leaf-mould, in about equal parts, to which should be added some sharp sand, and the plant should be slightly elevated above the rim of the pot, the latter being well and thoroughly drained. The plant, as found growing by Mr. Ansell, was near the base of Palm trees, revelling in fibre and leaf-mould, its roots forming large tangled masses at the base of the stems. During its season of growth and its time of flowering it requires a large amount of moisture, and in our houses sufficient moisture is necessary at all seasons to keep its stem-like bulbs from shrivelling, for should this occur, it will lose its foliage, and this detracts greatly from its appearance. The plant does not require to be disturbed frequently, and the best time to re-pot it is in the spring, just as it begins to show signs of new growth, and at this season it will require careful watering, but after the growth has attained to about a foot in height, the plant will have fully occupied its new quarters, and water may be given more freely. We find it thrive at the warmest end of the Cattleya house, and equally as well in the East India house, or even in an ordinary stove with other tropical plants; it requires but little shade, yet care must be taken to prevent its foliage from getting scorched.

Scale sometimes attacks this plant, but this should be carefully eradicated, as no plant can long remain in a healthy condition, unless kept free from insects.

This plant is propagated by division, and in doing this one or two old bulbs should be taken off with a leading growth, and the best time to perform the operation is just before growth commences; the piece or pieces divided from the old plant should be placed in small pots until they become established, after which they may be subjected to the treatment given above for the original plants.

ONÇIDIUM UNDULATUM.

ONCIDIUM UNDULATUM.

[PLATE 368.]

Native of New Grenada.

An epiphytal plant, with large ovate pseudobulbs, which, when young, are smooth and deep green; with age, however, they become ribbed and wrinkled, but never taper to a point, as do those of its near relative, *Oncidium superbiens*. *Leaves* oblong-lanceolate, strongly ribbed, and deep green. *Scape* some ten or more feet in length, much branched and many-flowered, bracts at the base of the pedicels, large, somewhat cymbiform. *Flowers* between two and three inches across; *sepals* large and clawed, the dorsal trulliform, somewhat reniform at the base, slightly incurved at the apex, the edge unequal and plain, lower sepals spreading, oblong obtuse, slightly incurved at the points, the colour being throughout of a bronzy brown, with a central band of pale green; *petals* larger than the sepals, clawed, oblong-cordate, emarginate, white, the lower half blotched with purplish mauve, spotted with purple on the upper margin, and flushed with irregular feathery streaks of yellow; *lip* small, triangular, ligulate, recurved at the apex, and of a uniform rich purple. *Column* small, recurved.

ONCIDIUM UNDULATUM, *Lindley, Sertum Orchidaceum*, sub. t. 48; *Id. Folia Orchidacea*, art. *Oncidium*, No. 15; *Reichenbach fil., Bonplandia*, 1854.

CYRTOCHILUM UNDULATUM, *Kunth, Humboldt, Bonpland and Kunth*, i., t. 84.

This Oncidium belongs to the paniculate, or Cyrtochiloid group, and although we have already figured several fine species belonging to this section, new discoveries continually afford us fresh materials to illustrate. The plants of this group really rank amongst the most noble and beautiful of Oncidiums, of which the portraits of *O. lamelligium* and *O. superbiens* have already appeared in former numbers of the ALBUM; their long many-flowered racemes of showy blooms rendering them very effective when they are naturally disposed. The species here represented is very distinct and rare, differing particularly from the majority of its congeners, which have for the most part yellow flowers, and therefore it becomes more welcome in arranging for effect, and for contrasts of colour. This Cyrtochiloid group of Oncidiums differs from the majority of the genus, in which the great display is produced by the lip; but here the lip is reduced to small proportions, and the great beauty of the flower is furnished by the enlarged sepals and petals. We are enabled to lay before our readers the portrait of this beautiful plant, through the kindness of R. J. Measures, Esq., Cambridge Lodge, Camberwell, in whose fine collection it bloomed in the early part of last year; the long spike bearing twenty-four flowers.

Oncidium undulatum is a strong-growing evergreen species, and it belongs to the *O. macranthum* section. The scape is produced from the side of the bulb after growth is matured, and, like all this section, it is a very long time between its first appearance and the development of its flowers. The sepals are brown, flushed with green in the centre, petals white, having a large irregularly shaped blotch of purple at the base, and spotted with brownish purple on the upper margins; lip wholly rich purple. It blooms during the months of March and April, and continues in full beauty for about six weeks.

This species requires similar treatment to that of *Oncidium macranthum*, revelling in the cool moist atmosphere of the Odontoglossum house, as do all the kinds from the cool regions of Colombia. There are also some fine kinds from the cool regions of Brazil that thrive under the same conditions, and thus become good companions, while as their flowers in many instances differ in colour from those of *O. undulatum*, *O. macranthum*, etc., they afford excellent contrasts. The plant now under consideration should be grown in good fibrous peat and living sphagnum moss, and the pot must be well drained. As before remarked, it is a strong-growing plant, and it produces roots in abundance. It requires a liberal supply of water during the growing period, and should not be allowed to get dry at any season, but during the winter months the quantity must be reduced considerably, just sufficient being given to keep the bulbs and leaves in a good healthy condition. Nothing is more inimical than shrivelling of the bulbs, to this section of the genus, and should it occur, it is a difficult task to restore them to health. With the early spring months the scape appears, and at this time the plant requires to be watered in a very careful manner; but after it has attained to a foot or more in height, water may be given more freely. In re-potting, care must be exercised that the roots do not receive injury, the best time for the operation being just prior to the commencement of new growth. If re-potting is not necessary, with the return of spring, any old or exhausted soil should be removed, and substituted by new, fresh material, after seeing that the drainage is in good working order. This operation must be performed with care, as the plant will receive a decided check if its roots are injured in any way.

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CIRRHOPETALUM ORNATISSIMUM.

CIRRHOPETALUM ORNATISSIMUM.

[Plate 369.]

Native Country ?

Epiphytal. *Pseudobulbs* ovoid, tetragonous, an inch or more high, arising from a creeping caudex, and rooting from beneath the pseudobulb, sheathed with two large membranaceous scales, monophyllous. *Leaf* solitary, springing from the apex of the pseudobulb, broadly oblong-obtuse, tapering at the base into a short petiole, upwards of four inches long, and two inches broad, thick and leathery in texture, and deep green. *Scape* solitary, slender, erect, longer than the leaves, and arising from the base of the pseudobulb, bearing two large sheathing scales at the base, and a large, central, boat-shaped membraneous bract. *Flowers* terminal, arranged in a semi-umbel of from four to eight, the ground colour is pale yellow, more or less streaked and flushed with rosy-purple; *sepals* unequal, dorsal erect, oblong ovate, the inside curled inwards, the upper edge fringed with long black hairs; lateral sepals broadly lanceolate, lengthened into long tail-like points, projecting forward, and having a peculiar twist at the base, which causes the two outer edges to meet together, these are soft yellow, streaked on the veins with purple; *petals* smaller than the dorsal sepal, somewhat falcate and pointed, the tips ornamented with a tuft of long black hairs; *lip* small, oblong, reflexed, and clawed, of a uniform deep purple. *Column* stout, with wing-like projections at the side.

Cirrhopetalum ornatissimum, *Reichenbach fil.*, *Gardeners' Chronicle*, n.s., 1882, xviii., p. 424.

The genus of which we here produce the portrait of a pretty form, is a somewhat extensive one, and includes many handsome species, the curious flowers of all being very remarkable. They are widely distributed, being found in China, India, various islands of the Malay Archipelago, as well as in the Mauritius, Madagascar, etc., etc. The majority of them are interesting, and some possess showy flowers; but all are deserving cultivation for the exceedingly curious formation of their flowers — portions of these, when mounted, forming beautiful subjects under the microscope. The various species which are to be found under cultivation are, however, mostly only in such collections as that of the Royal Botanic Gardens at Kew, and other similar establishments, where such curious plants are highly valued, and in a few of the larger collections of orchidaceous plants scattered throughout the country; but we strongly urge the amateur to cultivate some of these interesting plants, as they do not require great space for their accommodation, whilst they afford an endless field for study and thought to those who admire the curious as well as the beautiful productions of nature. The species we here so vividly bring to the notice of our readers is well deserving the attention

of all Orchid growers, and for it we are indebted to the kindness of F. G. Tautz, Esq., of Studley House, Shepherd's Bush, in whose garden it flowered last season, and from whom we have from time to time received many fine Orchids to illustrate the pages of the ORCHID ALBUM.

Cirrhopetalum ornatissimum is a pretty, dwarf-growing epiphyte, with small pseudo-bulbs about an inch high, and bearing dark green leaves, which are some five inches in length, and upwards of two inches in breadth. The spike rises from the base of the bulb, and is about seven inches high, bearing on the summit an umbel of pale purplish brown flowers, which are also striped and netted with purple. The dorsal sepal is furnished with a series of blackish purple hairs around the edge, and the tips of the petals are also similarly ornamented. It blooms in October, and the flowers last in perfection for a long time.

These plants are found growing on the stems and branches of the forest trees in their native wilds, and in such positions they get the full benefit of a free circulation of air, and at the same time are partially shaded from the burning sun during the day. The heavy rains come in their growing and flowering season, the resting time being the season of drought, but even then they receive the benefit of the heavy dews which frequently arise during the night, and which afford them support during the day, enabling them to maintain their bulbs and foliage in a healthy condition, so that when the rainy season again returns they soon start into growth and bring forth their flowers. The cultivation of this plant is not difficult; it requires a good season of growth, which may be obtained by giving it a liberal supply of moisture both to its roots and in the atmosphere, and during its rest it must be kept in a plump condition, as it objects to the shrivelling process, for should nothing more serious occur through shrivelling, it will sure to be considerably weakened. We find it to thrive best in the East India house, where it should be suspended near the roof-glass, in order to expose the plant to the full influence of the light, and it should be shaded from the sun during the hotter portion of the day.

We find this species succeed well on blocks of wood, but we prefer small pans or baskets for its reception, and these should be suspended in the full light. The drainage must be good, and the best potting material is a little rough fibrous peat and living sphagnum moss, whilst a few lumps of charcoal intermixed will be found highly advantageous, tending as it does to maintain everything about them sweet and clean, and in good order. When the plants require re-potting or re-basketing, it should be done just as they begin to make fresh growth. Propagation is effected by dividing the rhizomes, leaving one or two old bulbs at the back of the leading growth, and the best time for this operation is at the re-basketing before-mentioned.

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CYPRIPEDIUM CARDINALE .

CYPRIPEDIUM CARDINALE.

[Plate 370.]

Garden Hybrid.

Epiphytal. Acaulescent. *Leaves* spreading, tufted, ensiform, deep green. *Scape* erect, clothed with reddish-brown woolly hairs, and bearing ovate-lanceolate, boat-shaped bracts; it is branched, and bears numerous flowers. *Flowers* from two to three inches or more across; *dorsal sepal* oblong-obtuse, ivory-white, faintly tinged near the edges with soft rose; *lateral sepal* white, tinged with yellowish green on the outside; *petals* white, more or less tinged with soft rose near the base, where there are numerous short rose-coloured hairs, the margins also suffused with soft rose; *lip* round and full, intensely rich rosy-carmine, the infolded margin white, streaked and spotted with deep bright rosy-carmine. *Staminode* white, spotted in front with rosy-purple.

Cypripedium cardinale, *Reichenbach fil., Gardeners' Chronicle*, n.s., xviii., 1882, p. 488; *The Garden*, xxvii., t. 495; *Veitch's Manual of Orchidaceous Plants*, part iv., p. 102; *Williams, Orchid-Grower's Manual*, 6 ed., p. 240.

The beautiful plant we here portray is the result of a cross between *Cypripedium Sedeni* and *C. Schlimii albiflorum*, the first-named parent being itself a hybrid, raised by the Messrs. J. Veitch & Sons, between *C. longifolium* and *C. Schlimii*, and a most useful and pleasing variety it has proved to be. The plant now in question is very beautiful, and a great improvement in colour upon *C. Sedeni*; this brilliancy in the colour of the flowers of this section of the genus is an additional point in its favour, and will induce a greater number of amateurs to embark in the cultivation of Cypripediums, a genus which the botanist tells us is in danger of extinction in its natural habitats, but if such is the case, its day of extinction appears to be indefinite under cultivation. This plant is a free grower and a profuse bloomer, and produces its spikes and flowers in the same manner as its first-named parent, *C. Sedeni*. Our artist's drawing was taken from a fine example which bloomed in our own collection in the Victoria and Paradise Nurseries, Upper Holloway.

Cypripedium cardinale is a beautiful evergreen plant with deep green foliage, which is strap-shaped, tapering to a point, and upwards of a foot in length. The scape is produced well above the foliage, the lower flowers opening first, and as the spikes continue to lengthen they produce fresh buds, so that the plant is a "thing of beauty" for a considerable time; moreover, as these flowers drop off the plant in a perfect state after they have been expanded for several weeks, they may be used for personal adornment or other decorative purposes, as they retain their brilliancy and beauty for a long time after falling if placed in water. The dorsal

sepal is white, faintly streaked with green, and flushed near the edge with soft rose; petals white, with a patch of rose-coloured hairs towards the base; the lip or pouch is round and full, and rich rosy carmine in colour. It blooms at different seasons, and continues in flower for several months; indeed, we believe this section of plants is seldom to be found without flowers throughout the whole year.

All the Cypripediums of this section are characterised by their free growth, and when well grown they make fine handsome large specimens, which produce flowers in abundance from the young growths, so that they may be almost accorded the title of perpetual bloomers. They are free-rooting plants, and consequently require adequate pot room. The soil we have found the most suitable for them is a mixture in about equal parts of good fibrous-peat, turfy-loam, and good leaf-mould. The drainage must be good; indeed, we usually half-fill the pots with drainage material. In potting, the plant should be slightly raised above the rim of the pot, and the whole made firm and compact. These plants require a large amount of water about their roots during the growing season, and even when they are not active they should never be allowed to become dry, as they have no thick and fleshy pseudobulbs to assist in supplying the deficiency. It will be found, however, that nearly all the year round these plants are more or less active, and during warm and sunny days a slight syringing with tepid water will be found highly beneficial, but this should not be performed in a heavy drenching manner, as it will cause a quantity of water to gather in the sheaths and in the young leaves, a state of things which is not conducive to health, neither should the flowers be wetted at any time. Water also should be freely used about the pots and upon the stages, as it tends to keep a genial moist atmosphere which the plants enjoy, and it also prevents the attacks of thrips, red-spider, and other insects. The East India house is the most suitable position for *C. cardinale*, in the winter fully exposed to sun and light, but during the summer months we have found these plants thrive best when shaded from the sun during the hotter portion of the day.

Propagation is effected by division, the young growths being taken off with roots; these should be put into small pots at first, and kept in a somewhat closer position until they are established.

LÆLIA GOULDIANA .

LÆLIA GOULDIANA.

[Plate 371.]

Native of Mexico.

Epiphytal. *Pseudobulbs* clustered, oblong-ovate, from three to five inches high, smooth and soft-green when young, becoming corrugated with age, diphyllous. *Leaves* oblong-ligulate, acute, some six inches or more long, thick and fleshy in texture, and deep green. *Scape* erect, from top of pseudobulbs bearing several flowers, each of which is some four inches or more across, apparently intermediate between those of *Lælia anceps* and *L. autumnalis*, the black pubescence on the exterior of the ovary resembling that of the latter; *sepals* and *petals* spreading, the former lanceolate-acute, and bright rose-purple, which is intensified towards the tips, the latter much broader than the sepals, ovate-acuminate, crimson-purple; *lip* three-lobed, the side lobes erect, rounded, in the way of *L. autumnalis*, rosy-purple, the anterior lobe oblong-ovate, apiculate, colour deep purplish-crimson, crested with golden yellow, the disc traversed by three parallel ridges.

Lælia Gouldiana, *Reichenbach fil.*, *Gardeners' Chronicle*, 3rd Series, 1888, iii., p. 41; *Id. Reichenbachia*, ii., t. 59.

We have much pleasure in introducing this new Lælia to the notice of our readers. It would appear to have been introduced to North America in the first instance, where it was named in honour of Mr. Jay Gould, of New York. Its origin is involved in a certain amount of doubt. By some it is considered to be a natural hybrid between *Lælia autumnalis* and *L. albida*; whilst others again suppose its parents to have been *L. anceps* and *L. autumnalis*. In the colours of its flowers it certainly resembles the two last-named species, and it will undoubtedly become a very useful Orchid for autumn and winter decorative purposes. Our artist's drawing was taken from a plant kindly forwarded us from the well-grown collection of J. Statter, Esq., Whitefield, near Manchester.

Lælia Gouldiana is a splendid novelty, with evergreen foliage and ovate ribbed pseudobulbs, bearing usually upon the summit a pair of oblong-linear leaves. Flower scape about a foot high, bearing several flowers, the sepals and petals of which are deep rosy purple; lip the same colour, with yellow keels. It blooms during the months of December and January, and the flowers last some three weeks or more in full beauty if the plant is kept in a warm house, and the flowers are preserved from the damp. We have not ourselves cultivated this plant, and cannot therefore speak confidently of the precise treatment necessary to the successful management; but, judging from the practise of others, we should imagine it grows in the company of its supposed parents, and under exactly the same

conditions, so that it may be taken for granted that when its growing season commences there should be no time lost in rendering the plant every assistance to make its growth strong and vigorous, and to induce it to root freely. This, indeed, is necessary with all Orchids under cultivation, as our seasons are too short and uncertain to admit of delay. We should prefer baskets to grow these plants in, as they enable the cultivator to suspend them in the full sun and light, thus conforming in the nearest possible manner to the natural conditions of the plant, and allowing the roots to absorb the atmospheric moisture in the best possible manner. The material used for these plants should be good peat fibre and living sphagnum moss, whilst at the same time the drainage must be thoroughly efficient, as these plants require a large amount of water during active growth. After this is finished the bulbs should not be allowed to become dry enough to shrivel, as this will be sure to cause them to dwindle away, and lead to trouble in their restoration, without any one point of advantage having been achieved. A little shade during the hotter part of the day in summer will be beneficial, and a slight syringing on warm days during the period of active growth will cause them to make more vigorous shoots, without which bloom cannot be expected to follow in due season. The *L. autumnalis* section of this genus requires great care and attention, and does not appear to like being disturbed, unless it is to renew the material in which the plants are growing; and they are also impatient of being cut to pieces, so that increase by propagation in this manner is not readily achieved.

The best time for re-basketing is just as the plants show signs of fresh growth, which is usually some little time after their flowering season. If grown upon blocks of wood, as we have cultivated plants of *L. autumnalis*, they require a large amount of moisture overhead by syringing, as well as a constant lifting down and dipping in water, in order to keep them well soaked, but this system is more dangerous, and causes more trouble, than basket culture.

These Mexican plants appear to be very subject to the attacks of insects, especially the white scale, which is frequently imported with them in large quantities, and from which they appear to suffer in a marked degree. These pests should therefore be constantly searched for and destroyed, as good cultivation depends on cleanliness.

LÆLIA MAJALIS.

LÆLIA MAJALIS.

[Plate 372.]

Native of Mexico.

Epiphytal. *Pseudobulbs* clustered, ovate, or sub-rotund, smooth, but becoming furrowed with age, light green, bearing for the most part a solitary leaf, although occasionally two leaves are developed on one growth. *Leaves* lanceolate, from six to nine inches long, thick and leathery in texture, and deep green. *Scape* shorter than the leaves, usually one-flowered, but less frequently two-flowered, these individually measure from six to nine inches across; *sepals* somewhat narrow, lanceolate-acute, soft rosy-lilac; *petals* large, same colour as the sepals, but more than double their width, oblong-ovate; *lip* three-lobed, side lobes small, erect, obtuse, closing over the column, the tips reflexed, white within streaked with lilac, and suffused with the same hue towards the margins, anterior lobe large, spreading, emarginate, lobed round the edge, white in the centre, spotted and streaked with purplish lilac, and broadly margined with purplish mauve, the disc being traversed with a pale yellow ridge, which is broadest at the base.

Lælia majalis, *Lindley, Botanical Register*, xxx., t. 30; *Bateman's Orchids of Mexico and Guatemala*, t. 23; *Botanical Magazine*, t. 5667; *Paxton's Magazine of Botany*, xii., p. 1; *Belgique Horticole*, 1869, p. 129; *Jennings' Orchids*, t. 41; *Williams, Orchid-Grower's Manual*, 6 ed., p. 362.

Bletia speciosa, *Humboldt, Bonpland, and Kunth, Nova Plantarum, Genera et Species*, i., p. 342.

Bletia grandiflora, *Lexarza, in Orchidarum Opusculum; Reichenbach fil., Xenia Orchidaceæ*, ii., p. 55.

This beautiful species would appear to have been discovered early in the days of intercourse between Mexico and Europe, as it is mentioned by Hernandez in 1615, and to this day it must be reckoned amongst the very finest plants we have in cultivation. For the size of its bulbs, the flowers are larger than any other Orchid with which we are acquainted, but it has never been grown to the extent which its merits entitle it to. Many years ago this plant was in our possession, and we exhibited a fine specimen upon several occasions at the exhibitions of the Royal Horticultural Society held at Chiswick, and at that of the Royal Botanic Society held in the Regent's Park during the months of May and June, where it was deservedly much admired, but at that time (nearly forty years ago) this species was rarely to be seen in bloom in our collections. Few Lælias even of the present time can eclipse this species in the size of its blooms, or equal the lovely soft colour of its flowers. Of this species there are from time to time large importations, and upon these occasions strong masses are easily procurable; these with care will make

showy specimens, which will well repay the pains bestowed upon them, and as they do not occupy much space, and can be procured at a cheap rate, they come within easy reach of all amateurs.

Lælia majalis does not appear to vary much in the colour of its flowers, and even the worst form which we have seen has always appeared to us a plant well deserving cultivation. The plant which supplied the present portrait was forwarded us by the kindness of Reginald Young, Esq., Linnet Lane, Liverpool, in whose fine collection it bloomed in the month of May last season, and we may here record the fact of its being the finest variety that has hitherto come to our notice.

Lælia majalis appears to have an extensive range over Southern Mexico, whilst in some of its native habitats the temperature is said at times to fall below freezing point. It is called by the natives "The Flor de Mayo," or May Flower, and is dwarf in habit with roundish pseudobulbs, which bear leaves some four inches or more high, and of a light green hue. Peduncle about the same length as the leaf, usually bearing a single flower, which measures from six to eight inches or more across. Sepals lanceolate, acute, rather narrow, of a uniform delicate lilac-rose; petals twice the breadth of the sepals, oblong-ovate, but of the same colour; lip large and three-lobed, the side lobes small, white inside with magenta-purple stripes, middle lobe large, rounded, emarginate, purplish lilac at the sides and white in the centre, marked with blotches, forming broken lines of magenta-purple. The blossoms are produced in May and June, and they remain in full beauty for nearly four weeks if the plant is kept in a warm house and the blooms preserved free from damp.

This Lælia requires somewhat different treatment to the larger-growing members of the genus. Although the mode of culture necessary is very simple, it still requires careful treatment, a suitable place being one of the great essentials to success. It is a small-growing plant, found naturally on the branches of oak trees, and in situations where there is usually a strong current of air; under cultivation, however, we prefer small baskets for this plant, for the reason that less attention is necessary than when they are grown on blocks of wood. Good drainage is indispensable, and the material used should consist of rough fibrous peat and living sphagnum moss, with some medium-sized nodules of charcoal added. The baskets used should be as small as possible, and the plant raised well up on a cone-like mound, in order that the roots may ramble over the surface, but care must be taken not to overload the roots with soil, as if this falls into a state of decay, the roots soon become affected, and the health of the plant will rapidly decrease; should, however, the material get into a bad state, carefully disturbed it, and wash the roots before replacing the plant in the basket, but the plant should not be disturbed whilst the roots continue in good condition, as it is impatient of removal. During the growing season it enjoys an abundant supply of water, and hence the necessity of good drainage, whilst at the time of rest it should be carefully tended, so that its bulbs and leaves may be kept in a plump condition. This plant should be suspended near the roof-glass, as it enjoys abundance of light and but little shade, and unless these conditions are well studded the growth does not ripen, and no flowers will be produced. The Mexican house is the most suitable structure for its successful cultivation.

J Nugent Fitch del. et lith

ONCIDIUM SPLENDIDUM.

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ONCIDIUM SPLENDIDUM.

[Plate 373.]

Native of Mexico.

Terrestrial. *Pseudobulbs* stout, somewhat orbicular, clustered, compressed, with obtuse edges, about three and a half inches high, when young enveloped by numerous large membraneous bracts; monophyllus. *Leaves* a foot long or more, and about two and a half inches across, oblong, obtuse, channelled above, carinate behind, thick and fleshy in texture, deep green, more or less tinged with ferrugineous brown. *Scape* erect, springing from the side of the pseudobulb near the base, much branched in some examples, bearing a many-flowered raceme. *Flowers* large and rich in colour; *sepals* and *petals* about equal, spreading, recurved at the tips, undulate, rich yellow, transversely banded with blotches of rich bright brown; *lip* large and flat, obreniform, clawed at the base, and notched at the tip, side lobes very small, the colour is rich deep yellow, the disc ornamented with two short raised lines and a long central ridge, which is continued on to the front of the anterior lobe. *Column* short, with spreading wings at the sides.

Oncidium splendidum, *A. Rich, Flore des Serres*, t. 1825. *Botanical Magazine*, t. 5878 *(as O. tigrinum splendidum)*. *Williams, Orchid Grower's Manual*, p. 501-502 (with woodcut).

Oncidium splendidum ranks among the very finest of the yellow Oncids which have been introduced to cultivation, and for many years it was one of the very rarest, as but very few plants existed in Europe. The first plant that appeared in England was obtained by us when on a Continental journey, and it for a very long time remained the only plant in Britain, although after a time a few duplicates were obtained by division, and they realised exceedingly high prices. During the past two or three years, however, several large importations have come to hand, and these having produced flowers in abundance, thus proving that the plant is true to name, and that it has now become established in our collections, and also reasonable in price, are two facts worthy of note by all growers of this order of plants. Amongst the numerous plants imported there have flowered many varieties, which differ considerably in the intensity of the colour in the blooms, a circumstance which always occurs in a batch of seedling plants, but we may safely assert that we have not seen a single plant ourselves which could not command the title of "very beautiful," and well deserving the care and attention of any Orchid grower. The blooms are very showy, they last long in full beauty, and moreover, they are produced at just a season of the year (mid-winter) when flowers of a far less beautiful aspect are deservedly in great demand.

The original plant to which we have already referred was a very fine and richly

coloured form, and amongst the plants more recently imported we have observed several plants which fully equal it in every detail.

The portrait of the form here introduced to our readers is an exceedingly fine one, and it bloomed last season in the collection of H. J. Robinson, Esq., Aymestrey Court, Woolton, Liverpool. It produced a much-branched well-flowered spike, which was perfectly enchanting.

Oncidium splendidum is a lovely species, its evergreen leaves and pseudobulbs being thoroughly distinct; the latter are somewhat short, roundish, or ovate, and compressed; they bear upon the summit a single thick and fleshy leaf, which is of a deep sage-green, tinged with dull brown. The spike rises from the side of the bulb near to the base, and attains the height of from eighteen inches to three feet, the upper portion being more or less branched, and bearing numerous brightly coloured and showy flowers. Sepals and petals yellow or yellowish green, transversely barred with rich brown, whilst the lip is large and flat, of great substance, and clear rich yellow, the disc ornamented with about three raised white ridges. This particular specimen bloomed in the month of March of the present year, and we have seen this species blooming from the commencement of the new year, and they last for three weeks or a month in full perfection.

We have found the imported plants of this species thrive admirably in either a basket or a pot, and the strong growths bloom very freely. In the earlier times we had very little opportunity of estimating the habit of growth or its free-blooming qualities, as the few plants then known were cut for making stock as frequently as possible. In February of the year 1871, however, Lord Londesborough, then a distinguished patron of horticulture, exhibited a plant of *Oncidium splendidum* in flower before the Committee of the Royal Horticultural Society at South Kensington, when it was much admired, and received a First Class Certificate. Whether grown in a basket or pot it requires to be well drained, and it does not require a great amount of soil about its roots; this should consist of rough fibrous peat, from which all the fine soil has been beaten, and to this may be added a small portion of sphagnum moss. Some small pieces of potsherds mixed with the soil will also serve to keep the soil open and porous, and thus the water is carried away quickly instead of remaining, causing the soil to become sour and stagnate, in which condition this plant soon deteriorates, and the evils of which I have so frequently explained in these pages, and cautioned my readers against allowing any Orchid to be overtaken in this unhappy condition. In potting or basketing, make the soil very firm; when growing, a liberal supply of moisture and a moist atmosphere is requisite, but when the growth is mature very little will suffice. In the autumn or beginning of winter the spikes begin to push up, when an increase in the water supply will be necessary in order to induce good development of flowers. This plant should be grown in the Cattleya house, and it requires all the light possible, but in the most powerful sunshine a little shade will be found necessary. It is a plant very little troubled with insect pests, yet sometimes the white scale infests it, and unless this is speedily cleared away, the plant soon declines in health, and declines to make new growth.

J Nugent Fitch del et lith

AGANISIA CŒRULEA

B S Williams

AGANISIA CŒRULEA.

[Plate 374.]

Native of Rio Negro.

Epiphytal. *Rhizome* creeping, producing numerous, somewhat ovoid or pyriform pseudobulbs, which when young are enveloped in large membraneous sheaths, these fall away, and with age the pseudobulb becomes ribbed or furrowed. *Leaves* single or in pairs, oblong-lanceolate, tapering to the base, and deep green. *Scape* axillary, bearing from three to nine beautiful and large flowers. *Sepals* cuneate, concave, oblong-acute, slightly keeled behind; *petals* cuneate, elliptic, apiculate, all are spreading and yellowish, and suffused with a light blue tinge within and without; *lip* bidentate, the side lobes erect, with a pouch in the centre, in front of the mouth of which is a fleshy plaited callus, and before this callus is a fleshy plate which extends into three teeth in front; front lobe transversely reniform, with much undulated margins, brown, lighter at the edges. *Column* triangular, with large almost square wings, yellowish white, more or less suffused with blue.

Aganisia cœrulea, *Reichenbach fil., Gardeners' Chronicle*, n.s., 1886, xxv., p. 720.

This species is a member of a small genus of epiphytal Orchids, all of which are natives of various parts of tropical America. They belong to the section Vandeæ, and are closely allied to the Zygopetalums; whilst a glance at the figure of the species here represented will at once convince the most sceptical that this is a very lovely plant. *Aganisia* is a small genus of scandent dwarf plants, and we imagine the various members of the family are somewhat difficult to introduce in a living condition. Their size alone renders a judicious care necessary in order to get them started away during the dry or resting season, which as collectors of the present day are not hampered in the manner they were some few years ago by internal transit, there is certainly more probability of an importation of them coming to hand in good condition to gladden the hearts and the eyes of all growers of distinct and beautiful forms. The species here depicted was discovered by Dr. Spruce, on the Rio Negro, in his celebrated journey down the valley of the Amazon. The specimen from which our artist obtained the material for the accompanying drawing was sent us by the kindness of W. Holland, Esq., Linwood, Moseley Hill, Liverpool, in whose collection it flowered recently.

Aganisia cœrulea is a distinct and charming species. It has a creeping, woody rhizome, and somewhat ovoid pseudobulbs, which are about two inches high, and bear a pair of light green leaves on the summit. The racemes issue from the side of the pseudobulb, and bear several of its handsome flowers; the colour of the sepals and petals inside is soft bluish lilac, with darker tesselations, whilst on the

outside they are deep lilac; the lip is purplish brown, with a light ochreous border. Its flowers are produced in the summer months, and they continue in full beauty for a long time without injury to the plant.

This species should be grown on a block of wood, or better perhaps a raft, in which position its creeping stems will have space to ramble, and its roots will be able to better absorb the moisture from the atmosphere than is the case when an attempt is made to grow this plant in a pot. In its native country the plant grows upon the branches and stems of the forest trees, where they derive nourishment from the tropical rains, and from the decayed leaves which fall from the trees and alight amongst their pseudobulbs; and in the dry season they are sustained by heavy dews. The present plant enjoys a liberal supply of water under cultivation during the growing season, and during the period in which growth is not active the roots must be kept in a moist condition in order to maintain the pseudobulbs plump and firm. Neglect of this enfeebles the plant, and prevents the development of its handsome flowers in due season.

The temperature of the East India-house is most congenial to this species during the period of active growth, with abundant atmospheric moisture. It should be well exposed to the light, and shaded from the sun during the hottest parts of the day in summer; but during the winter no shading will be necessary, and the plant or plants hung up near the roof-glass in order that they may obtain all the light possible. The plants of this genus do not require much material about their roots, but a little is necessary when grown on a raft in order to avoid rapid evaporation. To this end a little living sphagnum moss should be placed about its roots, and a gentle sprinkling from the syringe morning and evening will be highly beneficial, to continue them in robust and vigorous health. In addition, the rafts should be frequently taken down and dipped in a tub of water, allowing them to become well saturated before hanging them up again in position. This, however, will not be needed frequently in winter, but even then do not allow the plant by any means to suffer in health by shrivelling. It will also be necessary to carefully keep these small-growing plants free from insects, because if these are allowed to increase they rapidly produce a sickly appearance which is too frequently succeeded by death; but at any rate, it leads to anything but the desirable appearance, from whence its generic name is derived.

LYCASTE CRUENTA.

LYCASTE CRUENTA.

[Plate 375.]

Native of Guatemala.

Epiphytal. *Pseudobulbs* clustered, ovate, more or less wrinkled, deep green, when young enclosed in large membraneous sheaths, diphyllous. *Leaves* broadly oblong, large, plaited, and deep green. *Peduncle* radical, erect, some six inches high, bearing a single large flower, upwards of three inches across, more rarely two flowers are produced on the same stem. *Sepals* spreading, ovate, obtuse, fleshy in texture, of a uniform deep yellow inside, tinged with green on the exterior; *petals* smaller than the sepals, rich yellow; *lip* three-lobed, shorter than the sepals, side lobes erect, rounded, anterior lobe recurved, yellow blotched with deep crimson at the base.

Lycaste cruenta, *Lindley, Botanical Register*, 1842, t. 13; *Williams Orchid-Grower's Manual*, p. 377.

Maxillaria cruenta, *Botanical Register*, 1842, t. 13.

Lycaste is a numerous genus of Orchids, formerly included with Maxillaria. Amongst them there are many beautiful species and varieties, some of which have already been depicted in the pages of this work. The one we here bring to the notice of our readers is a very distinct and showy kind, nearly allied to *L. aromatica*, from which, however, it differs in its stronger bulbs and broader leaves, and its larger and more showy flowers. It is an old inhabitant of our plant stoves, having been introduced some fifty years ago. Formerly it was more extensively cultivated than at the present time; but we hope in future to see it become more prominent in our collections, as it is a profuse bloomer, and it produces numerous flowers from each bulb, which renders it very conspicuous and showy. The portrait of the plant we here represent was taken from a handsome specimen grown by Mr. Bunn, gardener to J. S. Daniels, Esq., Melford Lodge, Stamford Hill, Middlesex, where a very good collection of Orchids is congregated.

Lycaste cruenta is a fine bold-growing species; the bulbs are ovate, supporting a pair of broadly plicate leaves of a light green. The flowers rise from the base of the bulb, the stem rising some six inches in height. It is usually one-flowered, but sometimes a pair of flowers are produced upon the same scape, both opening together, and each measuring upwards of three inches across. The sepals are bright yellow inside and green without, petals smaller, of the same form, and of a uniform rich yellow, the lip being three-lobed, and shorter than the sepals. It blooms in the months of March, April, and May, and it continues in bloom for

three weeks or a month without distressing the plant. This plant is of easy culture, and we prefer to grow it in a pot, for although it will thrive in a hanging basket or on a raft, we find it requires more care and attention, without yielding the slightest additional improvement either in the strength of the plant, or quantity of blossoms produced. It roots freely and requires a liberal supply of water to maintain it, and enable it to develop large and vigorous bulbs, which shall afterwards produce an abundance of flowers. After growth is mature the supply of water must be gradually reduced, untill it stops entirely, and the plant may be allowed to become quite dry; but during the season care must be taken that the pseudobulbs do not shrivel, as when this occurs the plant is weakened. The pots must be well drained, and the plants potted in good fibrous peat from which all the fine particles have been beaten, and to this should be added some small potsherds, or a few nodules of charcoal to keep the whole open and porous. This plant does not like the coolest house, and we have found it to thrive best when placed at the coolest end of the Cattleya or Brazilian house, where it should enjoy an abundance of light, and be lightly shaded during the hottest part of the day, otherwise the leaves are apt to become scorched and disfigured—and one of the chief beauties of any plant lies in its perfect foliage.

ODONTOGLOSSUM OERSTEDII MAJUS

J.Nugent Fitch del et lith

B.S.Williams Publ

ODONTOGLOSSUM OERSTEDII MAJUS.

[Plate 376.]

Native of Costa Rica.

Epiphytal. *Pseudobulbs* clustered, oblong-ovate, compressed, furnished with a single stalked cuneate-oblong leaf, some four or five inches long, by one broad, and deep green. *Scape* longer than the leaves, erect, bearing on the summit from two to five flowers about an inch and a half across, these are pure white, and yield a grateful perfume. *Sepals* and *petals* nearly equal, oblong-obtuse, spreading, fleshy in texture, and pure waxy white; *lip* three-lobed, side lobes small, anterior lobe large, rounded or sub-orbicular, deeply bi-lobed in front, pure white, crest yellow, dotted with orange-yellow. *Column* white.

Odontoglossum Oerstedii, *Reichenbach fil.*, *Xenia Orchidacea*, i., p. 189, t. 68, figure 1-3; *Id.*, *Gardeners' Chronicle*, vii., p. 302 (1877); *Botanical Magazine*, t. 6820; *The Garden*, xxvi., t. 454; *Williams, Orchid-Grower's Manual*, p. 456.

Odontoglossum Oerstedii majus supra.

We have already figured a great number of forms of this beautiful and popular genus in the Orchid Album, these for the most part being large-flowered and showy kinds. The subject of our present plate, however, belongs to the smaller section, and can neither lay claim to size nor showy colours, but it is so chastely beautiful that we do not hesitate to impress the value of it as a cultivated plant upon the minds of every grower of Orchids. It is dwarf in its habit of growth, and therefore requires but little space for its accommodation. It is very free-blooming, whilst its chaste waxy white flowers remain long in perfection, either left upon the plant or in a cut state, and in the cut state they may be used as gentlemen's coat flowers, or they may be utilised for the embellishment of ladies' hair, or when made up into shoulder sprays, in either and in all positions, they produce an elegant effect.

The sketch of the plant here figured was taken in the Victoria and Paradise Nurseries from a plant in our collection; it represents the major variety of the plant, which differs from the typical species in size only.

Odontoglossum Oerstedii majus is an evergreen plant of dwarf habit; its pseudo-bulbs are ovate, bearing a single oblong leaf, which tapers into a long footstalk at the base, and it is usually from three to four inches in length by one in breadth, both bulb and leaf being of a rich deep green. The scape is produced soon after the bulb is mature in size, and is usually longer than the leaves, bearing from two to five flowers, which measure individually an inch or an inch and a half across, and are delicately fragrant. The sepals and petals are spreading and bluntly oblong,

pure white, and fleshy in texture; lip also pure white, the disc yellow, faintly dotted with red, its agreeable odour rendering it a decided acquisition; the blooms are produced during the winter and spring months, and they remain a long time in full beauty.

This plant is one of the easiest to cultivate, and as it may be grown in shallow pans, and placed on a shelf or suspended from the roof near to the glass, a goodly number may be accommodated in but little space. It was discovered by Warscewicz about forty years ago on the mountains of Costa Rica at some 7,000 to 9,000 feet elevation, but it was not until some sixteen years ago that it came to this country in a living state. From the altitude to which it grows it may readily be imagined that it requires cool treatment, and we find that it succeeds best when grown in shallow pans, of a small size, suspended from the roof, or stood upon a shelf near the glass in a position to obtain the full light, but shaded from the hottest sunshine. The drainage must be kept in thorough order, and the potting material which suits the plants is fibrous peat and living sphagnum moss, this material should be used sparingly, for these small-growing kinds in particular require but little material about their roots, and this should be kept in a sweet and fresh condition. The best time to re-pot this species is just after the flowers have faded and before new growth appears, and this operation must be carried out in a careful manner in order to preserve the living roots. This is of more consequence than some growers appear to bestow upon it, and we have recently noted in a collection of Masdevallias of the Chimæra section the dire consequences of a mutilation of roots in re-potting. Should the plants after blooming not require larger pans, they will be much benefited by a renewal of soil, so that the older soil must be carefully removed and replaced with new, and care should be taken both in re-potting and renewing the soil to keep the plant elevated upon a cone-like mound above the rim of the pot or pan. In its native country it is said to select low-growing trees, in the moss-covered branches of which the plants nestle, that dense fogs daily envelop them, and that the temperature, at all seasons low, falls very low during the night, so that in this country during the growing season the plant enjoys an abundant supply of water, and during the winter season it must never be allowed to get dry, or the bulbs will shrivel, and the plant will suffer in health in consequence. The winter supply of water must be much reduced, but the plants must be kept in a genial moist condition.

Insects are very injurious to these small-growing kinds in particular, and therefore it behoves the grower to carefully eradicate them by washing with sponge and water.

ERIOPSIS RUTIDOBULBON

ERIOPSIS RUTIDOBULBON.

[Plate 377.]

Native of Antioquia, United States of Colombia.

Epiphytal on Palm stems. *Pseudobulbs* oblong, ovate, much corrugated, and deep purplish brown, two or three-leaved. *Leaves* broadly lanceolate, strongly ribbed, and leathery in texture, deep green *Scape* nodding, terete, deep purple, a foot or eighteen inches long, and many-flowered. *Sepals* and *petals* nearly equal, spreading, oblong, obtuse, deep orange-yellow, passing into reddish brown at the margins; *lip* three-lobed, obtusely spurred at the base, side-lobes broad, involute, deep purplish brown, middle lobe small, entire, orbicular, white, spotted and blotched with deep purple. *Column* stout, semi-terete, thickened upwards, shorter than the lip, yellowish green.

Eriopsis rutidobulbon, *Hooker, Botanical Magazine,* t. 4437; *Annales de Gand,* 1849, t. 253; *Williams, Orchid-Grower's Manual,* 6 ed., p. 324.

The plant here represented belongs to a small genus of Epiphytal Orchids, which, when not in flower, bear much resemblance to the Indian genus Eria, from which circumstance it derives its name. The subject of our illustration has been introduced to cultivation for nearly fifty years, having been discovered by Mr. Purdie, whilst collecting for the Royal Gardens at Kew. It is a beautiful and very distinct plant, found growing wild on the stems of Palm trees, and fully exposed to the sun, in the State of Antioquia, United States of Colombia, at an elevation of from 4,000 to 5,000 ft. For a long time this was a very rare plant, but during the past few years several consignments have arrived in this country in good condition, which, being distributed, enable growers to more frequently observe it; but it is deserving of a more extended sphere of cultivation than it has yet obtained.

We are indebted to the kindness of Sir Trevor Lawrence, Bart., M.P., of Burford Lodge, Dorking, for the opportunity of figuring this beautiful plant, in whose choice and rare collection this species thrives and flowers well.

Eriopsis rutidobulbon is a splendid species, with dark evergreen foliage. The pseudobulbs are much wrinkled, or rugose, whilst in colour they are of a dull purplish-black; they bear on the summit a pair of broadly lanceolate strongly ribbed leaves, and the spike issues from near the base of the growth. It attains a length of about eighteen inches, and, as will be seen by our illustration, it bears a long drooping raceme of handsome flowers, which are quite distinct in the arrangement of colours from most other members of the Orchid family. The sepals and petals

are dull orange-yellow, margined with reddish purple; lip white in front, the base being dull orange, dotted with purple. The inflorescence appears in the autumn months, and the flowers continue in full beauty for a very long time. This plant requires to be thoroughly established before it can be induced to flower, but when it becomes vigorous it blooms annually. This species thrives best when treated to basket or pot culture, and the plant should be re-potted just as the young growths begin to appear; care, however, must be shown in performing this operation, for the plant suffers greatly if its roots are injured to any extent. Should the plants not require re-potting, they will be much improved by having the old soil removed, and replaced with fresh and sweet material, and the best we have found for this plant is good peat fibre, from which all the fine soil has either been beaten or shaken. This must be used in such a condition that it may be readily broken up, and care must be taken not to use it when wet. Our usual practice in preparing composts for Orchid potting is to pull the turfs to pieces, and shake away the fine portion of the soil, then place it in a warm position in the potting shed, or similar place; this should be done some time before the compost is required, and thus some material is always ready for use and in proper order. The drainage for this plant must be maintained in a perfectly free and open condition, and the plant should be hung near the roof-glass to ensure a good amount of the sun's influence, but avoid too close contact with the roof-glass in the winter months, as the cold penetrates to the plants very quickly, and causes the temperature to fall too rapidly. As might have been inferred by the elevation at which it grows in a wild state, we find the temperature of the cool end of the Cattleya house to suit it admirably.

Death of Professor Reichenbach.—It is with no ordinary feeling of regret that we have to record this event, which took place at Hamburgh on May 6th, in his 66th year, and his loss to the botanical world will not be easily replaced. Since 1863 he had been Professor and Director of the Botanical Gardens in Hamburgh; a year previous to this our first acquaintance began, when he was at Leipsig, and at which time he had not come before the English people much in connection with Orchids, as our own great master and authority, Dr. Lindley, then held the sway in this country. Although the two men often worked together, it was not until the death of Dr. Lindley that Reichenbach stepped into power. Since that time he has ably and most courteously devoted himself to the study of Orchidaceæ; no one ever applied to him in vain on any subject connected with this family of plants. As yet we cannot estimate the great loss we have sustained, for at the present moment we have no one to succeed him. There is no one who, like him, had studied the family as he had for many years previous to the death of Dr. Lindley, and thus we English Orchid growers have sustained a loss which is not likely soon to be made good. Reichenbach worked arduously and honourably for any and for every one who applied to him for information, and we can only add, *Fama semper viret.*

(*Continued under plate* 379.)

CALANTHE BILOBA.

CALANTHE BILOBA.

[Plate 378.]

Native of India.

Terrestrial. *Pseudobulbs* elongated, bearing numerous large leaves. *Leaves* oblong-lanceolate, acuminate, tapering below, much plaited, and rich deep green. *Scape* erect, terete, longer than the leaves, and bearing on the summit a long, many-flowered raceme of singularly beautiful flowers. *Bracts* numerous, membraneous, lanceolate, acuminate. *Sepals* larger than the petals, oblong, acuminate; *petals* much narrower, all of a purplish hue; *lip* deeply bilobed in front, prolonged at the base into a short spur. The ground colour is purple or rosy purple, streaked and veined with lines of white. With age the colour of the whole flower changes, passing into bronzy orange.

Calanthe biloba, *Lindley, Folia Orchidacea*, Art. Calanthe, No. 5.

This is a beautiful species of the evergreen section of the genus, all of which are extremely ornamental, and well merit the attention of all growers of Orchids. At the present moment this is a rare plant in cultivation, although specimens were collected as far back as 1854 by Dr. J. D. Hooker in Sikkim at an altitude of 4,000 feet, and the only specimen we have yet seen blooming is the one whose portrait we have much pleasure in laying before our readers. This plant flowered in the collection of the Royal Botanic Gardens at Kew, where many rare and beautiful Orchids are grown in company with quantities of curious and interesting small-flowered species which, as a rule, are not found in other collections, and we are indebted to the kindness of Professor Dyer, the Director of the Gardens, for the opportunity of figuring this grand and rare species. *Calanthe biloba* produces cylindrical pseudobulbs, which bear large dark green plaited leaves, from between which, from the top of the bulb, the scape issues, bearing on the summit a dense raceme of many flowers. The blooms are quite distinct in colour from any other species belonging to the ever-green section; the sepals and petals are purplish, tinged with yellow-brown, the lip purple, striped with white, and it continues in perfection for many weeks.

We have not had any personal experience in the cultivation of this species, but of other kinds, taking *Calanthe veratrifolia* as the typical plant of the section, we should have no hesitation in saying it may be easily grown well, and flowered in the temperature of the East India house. We learn from Professor Dyer that it thrives well under the same treatment as *C. veratrifolia*. For plants of this section we prefer the side tables, in order to give them the full benefit of the light, but they require shading from the hottest sun. It will require a liberal supply of water during the

flowering and growing season, and even when at rest, in the dull and gloomy days of winter the roots must not be allowed to suffer for want of a fair share of that element, but the soil should always be kept in a friable, moist condition; neglect of this advice will cause the leaves to shrivel and become disfigured, and the flower spikes will be less and inferior in quality. This requires attention, as we frequently observe that many Orchids deteriorate in beauty through not receiving proper care.

All the plants of this section of Calanthe thrive best under pot culture, and the pots require to be well and thoroughly drained, but avoid overpotting, which is the great besetting sin of unskilful growers. For soil, we prefer a little fibrous peat, some turfy light loam, leaf-mould, and some sharp sand; this should be thoroughly incorporated, and in potting, some small nodules of charcoal introduced will prove highly advantageous. The best season for re-potting Calanthes is just as they start into fresh growth, which is usually soon after the flowering season. As this operation requires care in its manipulation, whatever old or sour soil may be about them should be removed, and if it appears bad, shake it all away, carefully washing the roots in clean water, in order that they may be saved from injury. When re-potting is necessary, the plant will require to be put into as small a pot as its roots will allow without breaking them, and the plant must be kept in a shady position, and water given somewhat sparingly until root action commences; and when it has again become established, transfer it to a larger pot if necessary, and treat it as previously recommended, but under any circumstances we prefer to keep these evergreen species of Calanthes somewhat more shaded than usual for a short time after re-potting.

Mr. Stuart Low's Moth Orchid (*Phalænopsis Stuartiana*). We have much pleasure in recording the receipt from J. Purvens, Esq., City Flour Mills, Coventry, of a magnificent spike of bloom of this chaste and beautiful species. The spike in question was almost four feet high, much branched, and bearing a superb drooping panicle of seventy-nine flowers, of large size and well marked. The upper sepal and petals of this species are creamy white on first opening, becoming pure white when fully expanded and mature; the lateral sepals on the outer half are also white, the inner half bright yellow, thickly spotted with rich cinnamon. The lip is destitute of tendrils, but is furnished with the anchor-like flukes as in *P. Schilleriana*; the colour is yellow, spotted with cinnamon-red, the apex of the side lobes pure white, the callus being rich golden yellow. This lovely plant was first introduced by the present head of the Clapton firm, in whose honour it was dedicated by Professor Reichenbach, and it well deserves the best attention of Orchid growers. Phalænopsids are now numerous and beautiful, which is in striking contrast with our own early experience, and there is no reason why they should be shunned by our Orchid growers, as this has been too much the fashion of recent years. A figure of this beautiful species will be found in Vol. v. of this work, plate No. 237. —B. S. W.

CYPRIPEDIUM ŒNANTHUM.

CYPRIPEDIUM ŒNANTHUM.

[Plate 379.]

Garden Hybrid.

A dwarf, stemless, terrestrial herb, bearing distichous, or two-ranked leaves, which are ligulate, tridentate at the apex, leathery in texture, and dark green, faintly tesselated with lighter green. *Peduncle* erect, covered with a dense, short tomentum, and bearing upon the apex a solitary medium-sized flower of great beauty. *Dorsal sepal* broadly ovate, greenish white at the base, with green and violet-purple veins, the border and upper portion pure white, central portion profusely ornamented with spots and blotches of purple, which frequently becoming confluent take the form of lines of colour; lower sepal smaller, and less beautifully marked; *petals* slightly deflexed, port-wine colour, flushed with violet, towards the base the colour becomes paler, passing to a yellowish hue, where in addition there are numerous dark purplish blotches; *lip* oblong, of a bright yet deep vinous purple. It is the result of a cross between *C. Harrisianum* (itself a hybrid) and *C. insigne Maulei*.

Cypripedium œnanthum, *Reichenbach fil.*, *Gardeners' Chronicle*, 1876, p. 297; *Williams, Orchid-Grower's Manual*, 6 ed., p. 252.

It affords us much pleasure in thus being able to bring before our subscribers the portrait of one of the most handsome of the numerous hybrid Cypripediums which the Messrs. Veitch have been fortunate enough to raise. This charming variety, obtained between *C. Harrisianum* and *C. insigne Maulei*, partakes of the character of the first-named plant in the tesselation of its foliage, but the leaves are much smaller, whilst its blossoms partake of the character of both parents. This plant has every good quality that can be desired; indeed, were we confined to grow one form of Cypripedium only, it occurs to us that this is the variety we should select on account of its free habit of growth and its profuse-blooming qualities, the blossoms being extremely bright and cheerful. More especially is this so in the variety *superbum*, and we cannot too strongly urge upon every lover of Orchids the necessity of adding it to their collections. These two plants were both raised by Mr. Seden, who is now so well and widely known as the successor to the veteran Dominy, as the hybridiser of Orchids for the Messrs. Veitch & Sons, of Chelsea. In this work Mr. Seden bestows much care and attention in the selection of the species and varieties which he shall use for his interesting work, and hence he is rewarded with such splendid results, which go to prove that the parents should not be taken at random. The drawing was taken from a plant that flowered during the autumn of last year in our own collection in the Victoria and Paradise Nurseries.

Cypripedium œnanthum is a charming variety with evergreen foliage, which is nearly six inches long, leathery in texture, and of a dark green hue, faintly tesselated with lighter green. The scape is terminal, and rises from between the leaves, and bears a single flower of medium size; the dorsal sepal is white, green at the base, with violet nerves, marked as in *C. insigne Maulei* with rows of purple blotches towards the base; lip port-wine colour. The blossoms are freely produced when the growth is nearly mature, so that its time of flowering is varied, according to the time of year the plant makes its growth, and these blooms continue in full beauty for six weeks or even more, and this, too, without any injury to the health of the plant.

We have upon previous occasions given instructions in the pages of the ALBUM as to the cultivation of this section of the Cypripediums—that is to say, that we find the best mixture for them is good fibrous peat, from which all the fine part has been shaken, some leaf-mould, and fresh living sphagnum moss, the whole to be chopped well together, and thoroughly incorporated. The pots should be filled three parts full of drainage material, and covered with some rough peat-fibre or living sphagnum moss; this will prevent the soil from running between the pot-sherds, and choking the free escape of the water, and the plant should sit upon an elevated mound of soil, raised some two inches or more above the rim of the pot. When newly potted, water should be given somewhat sparingly at first, increasing the supply as the new roots occupy the soil, and when the plants get fairly established a liberal supply is necessary, as this variety is both free in growth as well as in root development. We find the temperature of the East India house suits this variety remarkably well, but find that it loves a shady situation, but yet it requires as much light as possible during the whole year; it should, therefore, be placed on the side table near the glass. This treatment produces strong and vigorous growth; indeed, success in the cultivation of this genus depends upon the amount of light given them.

The hybrid Cypripediums appear to be of free vigorous constitution, and if kept from the attack of insects, increase in size rapidly, and they may be freely increased by division; this operation should, however, be undertaken when the growths are mature, and the shoots should all be taken off with roots.

(*Continued from plate* 377).—We are extremely sorry to find by the published extract from his will that his Herbarium is not only lost to England, but that it becomes really a dead letter to the Orchid world by being shut up for twenty-five years. The Professor told us, when visiting us some time ago, that it was his intention to leave his Herbarium to this country, and we sincerely regret that any English Orchid growers should have so bitterly aggrieved him as to cause him to have altered his mind and to shut up his numberless specimens, drawings, and copious notes from every one interested in this beautiful and popular order of plants.—B. S. W.

CYPRIPEDIUM WALLISII.

CYPRIPEDIUM WALLISII.

[Plate 380.]

Native of Ecuador.

A terrestrial, stemless plant, with distichous, ligulate, acute leaves, which are from a foot to eighteen inches long, leathery in texture, and pale green. *Scape* erect, pubescent, some eighteen inches high, and from three to five flowered. *Pedicels* some six inches long, of a pale green hue, and furnished at the base with a compressed sheathing bract. *Sepals* ovate-lanceolate, elongate, pale greenish white, with yellowish green veins and stripes, and bearing a few pale green spots in the centre near the base; *petals* extending into long wavy tails from eighteen to twenty inches long, broadest at the base, ivory-white, veined with light green, the apical portion more or less suffused with a pale ferrugineous brown; *lip* large, pouch-like, tipped with rosy crimson, passing into a yellowish green border round the aperture, the infolded portion ivory-white, sparingly dotted with reddish purple. *Staminode* triangular, brownish purple, with a yellow centre.

Cypripedium Wallisii, *Hort.*; C. caudatum Wallisii, *Veitch*; *Manual of Orchidæceous Plants*, Part iv., p. 61; C. Wallisii, *Williams, Orchid-Grower's Manual*, 6 ed., p. 261; *Lindenia*, iii., t. 131.

Selenipedium Wallisii, *Reichenbach fil.*, *Xenia Orchidacea*, t. 181.

This beautiful plant is popularly named the white-flowered *Cypripedium caudatum*, to which it bears close affinity. It appears to have been first found by Wallis, whilst collecting Orchids for Mr. Linden, of Brussels, about seventeen years ago, and it was first flowered in this country by Mr. C. Winn, of Selby Hill, Birmingham. This species has been found also by one or two other collectors, who describe the plant as growing in limestone districts, and in positions exposed to the full influence of the sun; and notwithstanding its having been several times imported, it still remains a rare plant in cultivation in European gardens. All the plants belonging to the *caudatum* section are difficult to establish from the imported state, and the present plant is no exception to the rule, whilst none of this section which have come under our notice can excel *C. caudatum* and *C. Wallisii* for grace and beauty, after they have become thoroughly established in our collections.

Our artist's drawing was taken from a well-grown plant in the grand collection brought together at Downside, Leatherhead, by W. Lee, Esq., but this fine lot of plants has since been sold, and the plants forming it have been dispersed, and have found a new home in collections in various parts of the world.

Cypripedium Wallisii is a distinct and beautiful evergreen plant; the foliage being leathery in texture, and of a pale soft green colour. The scape rises from the

centre between the leaves, bearing from three to five flowers, which, although similar to *C. caudatum*, are yet somewhat smaller than those of that species. The sepals are elongate and ovate, of a pale greenish white, distinctly striped over their surface with a bright green. Petals eighteen to twenty inches long, somewhat broad for about two inches at the base, from whence they pass into long wavy tails, which are white, strongly veined with green, the spiral portion in addition being flushed with pale brown; pouch large, white, spotted and veined with rosy crimson, the aperture margined with yellow. Its flowers are usually produced during the spring months, and if its blossoms are kept free from damp they continue in full beauty for a great length of time.

This plant requires similar treatment to that of *Cypripedium caudatum*, that is to say, pot culture appears to suit it admirably, but it is necessary to well drain the pots, as it requires a liberal supply of water during the season of vigorous growth; when this is completed it must still be kept in a moist condition, for as the plant has no pseudobulbs to assist in maintaining it through a period of drought, it must not be allowed to become dry, or the leaves will be liable to shrivel, and the plants fall into bad health, which is a perilous condition for this section of the genus. We find that good fibrous peat, when mixed with leaf-mould and sharp sand, to be the best potting material for this plant, to which may be added with advantage, some nodules of charcoal. It should be elevated upon a cone-like mound, which not only carries away the water more quickly from its base, but it gives a greater surface, and allows the roots to work more freely. Upon the slightest sign of the potting material becoming bad, it must be at once removed from contact with the roots, and replaced with new and sweet mould; care, however, is requisite in the performance of this operation, or serious injury may arise from damage to the roots. The cool end of the East India house is a very suitable place to grow this plant; we have, however, grown *C. caudatum* equally well at the warm end of the Cattleya house, and in all probability this plant may be so grown successfully. It requires to be shaded from the sun's influence during the hotter portion of the season, but when the sun's heat begins to decline, let the plants have all the light possible, in order to secure and finish up strong flowering shoots.

The most suitable time for potting or re-potting we find to be just as it begins to put forth new shoots, which takes place sometimes shortly after flowering. It should also be kept perfectly free from insects of every description: green-fly sometimes becomes a great plague by getting amongst its blossoms, and causing great havoc, but these must be carefully destroyed.

PHAJUS MACULATUS.

PHAJUS MACULATUS.

[Plate 381.]

Native of Northern India and Japan.

Terrestrial. *Pseudobulbs* large, clustered, oblong-ovate, bearing numerous large and showy leaves. *Leaves* large and spreading, ovate-lanceolate, acuminate, much plaited, and tapering below into a long sheathing petiole, deep green, profusely and regularly spotted with yellow. *Scape* erect, issuing from the side of the pseudobulb, near to the base, from two to three feet high, and bearing on the upper part a long raceme of many flowers, which are very attractive. *Sepals* and *petals* nearly equal, oblong-obtuse, slightly incurved, clear bright yellow; *lip* thick and fleshy in texture, involutely cylindrical, three-lobed in front, terminating behind in a short, straight, obtuse spur; lateral lobes small and rounded; anterior lobe obtusely ovate, plicate crenate, crumpled and frilled on the incurved edge, where it is stained with deep brown, the ground-colour being clear yellow.

Phajus maculatus, *Lindley, Botanical Magazine*, t. 3960; *Loddiges, Botanical Cabinet*, t. 1803; *Williams, Orchid-Grower's Manual*, 6 ed., p. 521.

Bletia Woodfordii, *Blume, Orchidees de l'Archipel Indien, et du Japon*, t. 5 E.; *Hooker, Botanical Magazine*, t. 2719; *Reichenbach, Flora Exotica*, t. 63.

Bletia flava, *Wallich.*

The genus we here represent is not a large one, but it includes several noble species, some of which bear ample dark green leaves, and erect spikes of very bold and handsome flowers. These plants, in recent times, have been too much neglected; but many years ago *Phajus Wallichii* was frequently seen at the exhibitions at Chiswick, Regent's Park, and other places during the months of May and June. It produced a noble appearance, especially when used as a back-row plant, with its large, plaited, dark green leaves, and from ten to fifteen bold erect spikes of fine showy blooms. This species used to be so exhibited in fine condition by the late Mr. Ellis, of Hoddesdon, a keen lover and grower of Orchids, and also by Mr. Carson, from the famed gardens of Nonsuch Park, in Surrey, and by various others. *P. grandifolius* was another species exhibited in the same manner in the olden times, which, although not quite so showy as *P. Wallichii*, was yet a very effective plant; whilst yet more recently has been added *P. Mannii*, which, when established in cultivation, will be far the finest of the three. The majority of these plants are of easy culture, and may be successfully grown in an ordinary stove with a mixed collection of plants, and if their wants are duly supplied, they never fail to produce their stout spikes, laden with large and showy flowers, in abundance. There are some dwarf-growing kinds; one of the most beautiful, although difficult plant

to manage, is *P. tuberculosus*, a native of the Island of Madagascar, which was figured in the second volume of the ALBUM, t. 91. A glance at the present plate will convince any of our readers that this subject is both beautiful and distinct, and although the plant has been much neglected, it may yet be found in many old collections of stove plants, where it grows and blooms in great perfection. The plant here figured was introduced to cultivation about sixty-six years ago, having been brought from Northern India in 1823, and as the great aim and object of modern Orchid growers has been to secure new species, this old plant, like many others of the most beautiful Orchids, has been cast on one side for newer and, in many instances, less beautiful kinds. To all such movements, however, there usually comes resuscitation, and this appears now to be in force, for the old plants are being eagerly sought for, and amongst them *P. maculatus*. We have always endeavoured to keep these old plants by us in loving memory of days gone by, and our artist took his drawing from a specimen in our own collection in the Victoria and Paradise Nursery, where it has bloomed annually for many years.

Phajus maculatus is an evergreen, and is an extremely showy plant; in many instances it is erroneously named *Calanthe Sieboldii*, from which rare plant it is abundantly distinct. The pseudobulbs are ovate, about four inches high, and of a peculiar shade of green; the leaves are about two feet in length, much plaited, the ground colour being green profusely ornamented with yellow spots. The scape is erect, from eighteen inches to two feet in height, and towards the apex is borne a raceme of about a dozen flowers, which are of a showy yellow colour; the lip is fringed and streaked with reddish brown on the front margin. The flowers open during the spring months, and continue in beauty for a very long time.

This plant is easily grown into a good specimen, and it requires only the ordinary care bestowed upon stove plants. It enjoys an abundance of light and sunshine, yet, as its leaves are somewhat thin, it should be shaded through the hottest part of the day in summer, in order to preserve its foliage intact, for they present a very bad appearance when scorched. If the plant is grown with other Orchids, it will thrive best at the cool end of the East India house, or the warmest end of the Cattleya house. It is a terrestrial plant, and should be potted accordingly; the soil we have found it to thrive best in is rough fibrous peat, good turfy light loam, and sharp sand thoroughly incorporated. The drainage must be good, and should be covered with a layer of sphagnum moss, to prevent the mould running into and choking it. A liberal supply of water is necessary during the growing season, which must, however, be considerably curtailed during winter, when, although much less is necessary, it should never become quite dry, or the leaves will suffer, and the plant become disfigured. At the time the spikes begin to appear the supply of water may be increased, as these require strength to develop their beauty. When the blooming season is over, the plant begins to renew its growth, and this is the best time to re-pot; if this is not necessary, the upper portion of the old soil should be removed and renewed.

LÆLIA SUPERBIENS QUESNELIANA.

LÆLIA SUPERBIENS QUESNELIANA.

[Plate 383.]

Native of Mexico and Guatemala.

Epiphytal. *Stems* creeping, and bearing close together strong fusiform pseudobulbs, which when young are enveloped in several membraneous sheaths, these fall away with age, and the pseudobulbs become furrowed. *Leaves* usually in pairs, oblong-acute, leathery in texture, and deep green. *Scape* terminal, some five feet in length, bearing numerous pale brown membraneous sheathing acute bracts, and towards the apex a raceme of about a dozen flowers, which are large and showy. *Sepals* and *petals* lanceolate-acute, spreading, the latter slightly the broader, wavy at the edges, and rich deep rosy purple in colour; *lip* pandurate, oblong, three-lobed, lateral lobes erect, acute, not closing over the column, anterior lobe oblong, emarginate, intense deep magenta-purple, waved at the edges, and bearing on the disc four or five elevated and fringed crests, which are rich yellow. *Column* semi-terete, slightly decurved.

Lælia superbiens Quesneliana, *Hort. supra.*

The typical *Lælia superbiens* figured by us in the Album (vol. vi., t. 244) is a very distinct and noble Orchid, introduced to this country about the year 1842. It is called in Guatemala the Wand of St. Joseph. The first example of this species which came to our notice was a grand specimen collected by Hartweg in Guatemala, which flowered in the gardens of the Royal Horticultural Society at Chiswick many years ago. This plant was some five feet across, and bore as many as nine spikes of its magnificent blooms at one time. We are glad to be able to figure in the pages of the Album the portrait of a superb variety of this grand old species, which first flowered in the gardens of M. Quesnel, of Havre, France. It is a lovely variety, and one that is very rarely met with in cultivation.

We received a fine spike of this variety bearing a raceme of thirteen flowers from Holbrook Gaskell, Esq., of Woolton Wood, Woolton, Liverpool, in whose grand collection the plant bore two spikes, each of which was five feet in length, one carrying thirteen and the other eleven well-expanded blossoms. The collection of Orchids at this establishment is exceptionally good, and its management under Mr. Todd, the gardener, is well carried out.

Lælia superbiens Quesneliana is a handsome and noble evergreen. The growth is similar to that of the typical plant, its fusiform stems or pseudobulbs bearing a pair of rigid leathery leaves on the summit. The spike springs from between the leaves, and attains a length of over five feet, bearing near the apex a raceme of

flowers, varying from eleven to thirteen in number, each measuring several inches across. The sepals and petals are deep rosy purple, and the lip intense magenta-purple, with four prominent yellow crests. The flowers are produced during the months of February and March, and it continues in full beauty for a considerable time, thus proving itself very useful for winter decoration—a season when such beautiful flowers are highly appreciated, and when they are always in special request.

This variety requires to be treated in a similar manner to *Lælia superbiens*. It is a strong-growing plant, and will thrive either in a basket or in a pot, suspended if possible about two feet from the roof-glass, where it may obtain full exposure to the sun's rays. We have also grown the species on a large block or raft of wood, but when treated in this manner more attention is required to the supply of moisture during the season of growth, and we much prefer the pot or basket system. Fibrous peat—from which all the fine particles have been shaken (a process which is easily performed when the peat is dry)—is the material this plant delights in having about its roots. To this may be added, with advantage, some nodules of charcoal, which help to keep the material sweet and in free and open condition. This is a point of the greatest importance, as these plants do not like anything stagnant about their roots. The pot or basket must be well drained, and should be filled three parts up with some charcoal or broken potsherds, whilst the soil should be elevated in a cone-like manner above the rim of the pot. Upon this the plant should be placed, thereby enabling the roots to work either inside or outside, the latter being more congenial to the requirements of the plants. It requires an abundant supply of moisture to its roots during the time of active growth, but when dormant the quantity must be considerably reduced; indeed, just sufficient to maintain the pseudobulbs and leaves from shrivelling is all that is necessary, but should they be overdried, it frequently requires a considerable length of time to restore them to a healthy condition. When the flower spikes begin to appear a little more moisture becomes essential, and the quantity should be increased as the spikes advance.

The Cattleya house suits this plant well, and although Mr. Skinner records the fact that hoar-frost was on the ground when he found the species first, it has always thrived best with us under cultivation in a warmer temperature. Mr. Skinner also observes that where the plant is most numerous the finest examples existed in situations sheltered from the north wind. It also enjoys all the sun and light it is possible for us to give it, but as it must be remembered that all our plants are under glass, and with a considerably reduced circulation of air to the open atmosphere, it will be necessary to shade lightly from the hottest sun in the height of summer. Treated in the above manner there is little to fear, and the plants will bring forth their showy blossoms in due season.

B. S. Williams, Imp.

LYCASTE COSTATA.

LYCASTE COSTATA.

[Plate 384.]

Native of the United States of Colombia.

Terrestrial. *Pseudobulbs* some three inches or more high, oblong-ovate, obtuse, slightly compressed at the sides, smooth when young, becoming furrowed with age, deep green. *Leaves* from a foot to eighteen inches long, ovate-lanceolate, acuminate, plicate, and ribbed, petiolate, and rich deep green. *Peduncle* erect, single-flowered, furnished with numerous large, ovate, acute, sheathing bracts. *Upper sepal* ovate-lanceolate, incurved; *lateral sepals* somewhat falcate, deflexed; *petals* shorter and narrower than the sepals, projecting forward over the column, all yellowish white, which becomes tinged with pale green towards the edges; *lip* three-lobed, lateral lobes erect, oblong-acute; anterior lobe broadly oblong, apiculate, deeply fringed at the sides near the base, white, bearing on the disc an elevated fleshy callus, in front of which is a faint stain of yellow.

Lycaste costata, *Lindley, Botanical Register*, xxix., misc., p. 15; *Gartenflora*, t. 620.

This is a useful and free-blooming species, and one that is in much request for decorative purposes. It produces quite a number of flowers from each bulb, and is well adapted for cutting, as the blooms last a long time in perfection when arranged with other flowers in water, or in wet sand in a glass or vase upon the table, and at night they yield a delicious perfume. In the daytime, however, the flowers are quite devoid of fragrance; this is a curious fact, which occurs with many Orchid flowers, whilst numbers of them yield a distinct perfume at different times during the twenty-four hours. Several consignments of these plants have arrived in this country from Colombia, having been sent by collectors for a species of *Anguloa*, which the plant much resembles when not in flower. As a species it would appear to be nearly allied to *Lycaste lanipes* or *L. Barringtoniæ*, from either of which, however, it is quite distinct. The sepals and petals are larger and broader, and it produces its flowers in the winter months, when choice flowers of all kinds, but especially white kinds, are in great request; moreover, they help to enliven the plant houses at a dull season, and when frost and snow prevail in the open air. This species, when in flower, may be taken into a warm conservatory or the dwelling-house, where it may be kept without any ill effects arising, if protected from cold draughts; indeed, nearly all the plants belonging to this genus may be so utilised, for proof of which see note by Mr. Skinner upon the treatment of *L. Skinneri*, recorded in *The Orchid-Grower's Manual*, 6 ed., p. 52. The plate now before us was prepared from a specimen growing in our own collection in the Victoria and Paradise Nurseries.

Lycaste costata is a showy and beautiful evergreen species. Its pseudobulbs are some three inches high, bearing broad, plicate, deep green leaves, which vary from a foot to eighteen inches in length. The peduncle springs from the side of the bulb, near the base, bearing a single flower on the top, quite a number springing from the same bulb. The sepals and petals are yellowish white, the lip being white, and fringed on the sides. It blooms during the months of January and February, and continues in full beauty for several weeks.

The treatment we have found this plant to thrive under is to grow it in the cool house, but the warmest end of the Odontoglossum house should be selected for it. It should be grown in well-drained pots, and the best material to use for potting is a mixture of fibrous peat and sphagnum moss. During the growing season the plant enjoys an abundant supply of water. This must, however, be considerably reduced when growth is completed, giving at this time just sufficient to keep the bulbs and leaves in a healthy condition. The flowers begin to appear soon after growth is completed, when a slight increase of the water supply will be advantageous.

ODONTOGLOSSUM NÆVIUM MAJUS.—A grand example of this rare Odontoglot was recently flowering in the collection of M. le Comte de Germiny, Chateau de Gouville, France; the plant in question bore twenty spikes of its pretty flowers, and great credit is due to M. Vincent, the able gardener, for the way in which he cultivates his Odontoglossums. -*O. nævium majus* never has of late years become very plentiful in collections. It is a lovely Orchid, and should be sought after by cultivators who value a distinct and beautiful plant.—B. S. W.

J. Nugent Fitch del. et lith.

B. S. Williams Publr.

ODONTOGLOSSUM SCHRÖDERIANUM.

ODONTOGLOSSUM SCHRÖDERIANUM.

[PLATE 382]

Native of Ocãna, U.S. of Colombia.

Epiphytal. *Pseudobulbs* oblong-ovate, somewhat compressed, becoming wrinkled with age, deep green and leafy at the base, the radical leaves broadly oblong-acute, the apical ones more lanceolate, channelled in front, keeled behind, and deep green. *Scape* erect, many-flowered, the blooms yielding a delightful fragrance resembling Vanilla. *Dorsal sepal* and the *petals* about equal, erect, *lateral sepals* longer and spreading, all oblong-acute, wavy, white, with numerous blotches of purplish mauve; *lip* adnate to the base of the column, pandurate, the basal portion broad, the anterior part obcordate, flat and apiculate, white in front, the disc bearing two purplish mauve blotches, the calli yellow, dotted with red, and on the much-developed callus at either side in front of the column is a plate of radiating spines. *Column* white, passing into yellowish towards the base, the wings white and dentate, sparingly dotted with purplish mauve. It is a supposed natural hybrid between *Odontoglossum tripudians* and *O. Pescatorei.*

ODONTOGLOSSUM SCHRÖDERIANUM, *Reichenbach fil.*, *Gardeners' Chronicle*, xvii., 1882, p. 700; *Veitch's Manual of Orchidaceous Plants*, part i., p. 76; *Williams, Orchid-Grower's Manual*, 6 ed., p. 464.

The genus *Odontoglossum* has now become very numerous, and especially so in kinds which are supposed to be natural hybrids; indeed, these forms appear to be endless, many of them being exceptionally beautiful. New importations are always anxiously searched with a view of detecting them, and in nearly every instance some very valuable form is met with. At present we have done very little in cross-breeding this genus, but as these plants grow freely from seed, even at home under cultivation, there is little doubt but those amongst us who are devoting their energies to this work may be rewarded with some startling novelties. It would appear that Odontoglossums intercross in a remarkable manner in a state of nature, then how much the more likely are growers at home to be successful, when the number of fine kinds growing together in close proximity is taken into consideration? But yet, anyone interested in these plants, and living in their native country, should endeavour to collect as many different species together in one spot as possible; these would soon become established, and when in flower cross-breeding should be effected; in which operation insects would also take an active part. Here the seeds would distribute themselves and quickly vegetate, for being in a natural state they should grow faster and flower more quickly than with us under our artificial conditions, whilst nothing can be effected without patience and perseverance, we have made this suggestion with

the hope that it may be the means of increasing the number of this deservedly favourite family of Orchids.

Odontoglossum Schröderianum is supposed to be a natural hybrid between *O. tripudians* and *O. Pescatorei.* It was dedicated, by the late Professor Reichenbach, to Baron Schröder, of the Dell, Egham, whose collection of Orchids is too well known to our readers to need further comment necessary in this place. The plant from which our drawing was taken, flowered in the fine collection of R. H. Measures, Esq., The Woodlands, Streatham.

Odontoglossum Schröderianum is a pretty, distinct evergreen species; the sepals and petals are oblong-acute, wavy, white, with purplish mauve blotches; lip pandurate, broader at the base, becoming obcordate and apiculate in front; white, with two purplish mauve blotches on the disc; callus, consisting of radiating spines on each side, yellow, sparingly spotted with red. It blooms in August and September, the flowers lasting long in perfection, and yielding a delicious aroma. It still continues to be a very rare plant in cultivation.

This species of Odontoglot requires similar treatment to *O. Pescatorei,* and those of its class which come from about the same altitude. Many of these species grow at different altitudes in their native countries, and it would greatly assist the cultivator at home, in determining the exact position in which to place the plants, if collectors would give strict records of the conditions under which the plants exist, the altitude at which they grow, and the conditions of the atmospheric surroundings. It will thus be seen that no one can successfully cultivate plants without exercising care and forethought, bestowing every needful attention at the proper time, and in any case of failure a remedy should be supplied at once, for procrastination—that "thief of time"—is also the cause of many failures in Orchid-growing, which, if taken in hand in time, might have "led on to fortune." Again, many people who have been successful growers of plants often treat them in an indifferent manner, and then express surprise if the plants fail or are not to be found in first-class condition—indeed, this system of neglect is too prevalent with superficial observers; but let it be ever kept in mind that plants always require care and attention to keep them healthy, presentable, and in a proper state of development.